SIDA’S GLOBAL RESEARCH PROGRAMMES

ANNUAL REPORTING

INTERNATIONAL SCIENCE PROGRAMME (ISP)

ANNUAL REPORT TO SIDA 2011

ISP 50th Anniversary Seminar, 26 September 2011
“On the 1st of September, 1961, an international fellowship programme started at the Institute of Physics, Uppsala University. Fifteen fellows from 14 developing countries were invited to spend one academic year in Sweden to be trained in research work. The programme was then called the International Seminar for Research and Education in Physics.”

The first group of ISP participants (1961-62) during the introduction course

Cover picture: (from left to right) H. E. Dr. Mohamed Gharib Bilal, Vice President of the United Republic of Tanzania; Professor C. N. R. Rao, Jawaharlal Nehru Centre for Advanced Scientific Research, India; Professor Mohamed H. A. Hassan, former Executive Director of The Academy of Sciences for the Developing World (TWAS); Professor Romain Murenzi, present Executive Director of TWAS.
SECTION 1: EXECUTIVE SUMMARY

International Science Programme (ISP) Annual Report to Sida 2011


Objective, Relevance, and Organization (Sections 2 – 4)

The purpose of the International Science Programme (ISP), Uppsala University, Uppsala, Sweden, is to contribute to the development of active and sustainable environments for higher education and scientific research in developing countries, within the basic sciences chemistry, mathematics, and physics, with the objective to increase the production and use of results relevant for the fight against poverty by researchers in the basic sciences in developing countries. The objective was refined 2010 - 2011, and established by the ISP Board on 25 September 2011.

ISP was initiated in 1961 and now consists of three subprograms: the International Programme in the Physical Sciences (IPPS, since 1961); the International Programme in the Chemical Sciences (IPICS, since 1970); and the International Programme in the Mathematical Sciences (IPMS, since 2002).

ISP provides long-term support to Research Groups and Scientific Networks. The work is carried out in close cooperation with research groups at more advanced host institutions. Although Uppsala University is the base of the operation, ISP functions as an international program and host laboratories may be at other Swedish universities, in other Nordic and European countries, and in the regions. This is to meet the requests from developing countries on their own terms. ISP also handles other research programs, organised by Sida.

ISP operation is well aligned with the overarching goals and strategies of Uppsala University, and with its program for internationalization, as well as with the Swedish government’s strategy for Sida’s support for development research cooperation, based on the Policy for Global Development, established by the Swedish Parliament in 2003.

Activities and Results (Sections 5 – 6)

Support to scientific Research Groups and Networks

In 2011, Sida funding was used to support 31 Research Groups in 7 African and 3 Asian countries; 7 in Kenya, 4 in Ethiopia, 3 each in Bangladesh, Cambodia, Laos, Mali and Zimbabwe, 2 each in Burkina Faso and Zambia, and 1 in Uganda. In addition, 14 regional Scientific Networks were supported, 11 in Africa, 2 in Asia, and 1 in Latin America.

The total, expenditures by ISP-supported Research Groups and Scientific Networks in 2011 were 19,377 kSEK, 58% by Research Groups and 42% by Scientific Networks. Costs for “sandwich” training of students with collaborating host groups made up 22% of the total, regional collaboration made up 21%, development (including amendment of laboratory equipment) 48%, and short term visits to collaborators, conferences, etc. made up 9%. The
supported activities in Africa accounted for 78% of the expenditures, in Asia 16%, and in Latin America 6%.

A total of 185 PhD students (24% of which were female) were active in ISP-supported research groups and scientific networks in 2011, of which 54% on a sandwich basis. During the year, 19 students graduated on the PhD level, about a third of them participating in sandwich programs. The number Master students was 319, of which 27% were female, and 12% participated in sandwich programs. Of the 96 graduating, only 1 participated on a sandwich basis.

Regarding dissemination of scientific findings in 2011 it can be noted that 44% of the in total 148 publications in international scientific journals were in high-ranking journals listed with ISI impact factors. In addition, 23 contributions were made in the form of books, chapters, popular publications and technical reports.

Furthermore, 183 contributions were made to scientific conferences, 41% at the international, 33% at the regional, and 26% at the national level, and 42 scientific events were arranged.

Several examples of research findings and their applications were reported by supported scientific Research Groups and Networks, as well as opportunities for policy influence, and strengthening of participating activities by awards and promotions.

Summing up the nine-year period 2003 – 2011, support was provided to up to 50 research groups and 21 scientific networks annually, with a total, annual expenditures averaging approximately 2 million EUR. Over this period, the following total outcome was achieved per million EUR spent:

- 12 PhD graduations, plus
- 50 Masters graduations, plus
- 87 Scientific publications, plus
- 113 Conference contributions, plus
- 21 meetings organised.

_Sida activities_

The collaboration with Sida in 2011 has included commissioned coordination assignments in 5 Sida programs for research development, in Ethiopia, Mozambique, Tanzania, and Uganda, as well as in a regional program in Central America. In October 2011 ISP was assigned the Swedish coordination of the whole bilateral programme with Universidad Eduardo Mondlane in Mozambique, including 12 subprogrammes with collaborating partners in Sweden.

Several meetings with Sida took place during the year, most notably the Annual Review Meeting in June.

_Other activities_

ISP has participated in collaborative activities with the Pan African University (PAU), with the International Foundation for Science (IFS), and with the Southern African – Nordic Centre (SANORD).

ISP celebrated its 50th Anniversary in September 2011, with a seminar that attracted about 200 participants from Sweden and abroad, representing universities, authorities, embassies, and other organisations. The work of ISP was highlighted from several perspectives, and the importance of the basic sciences as a driving force for development was widely recognized.
ISP signed new agreements of cooperation at various levels with six institutions in different countries. Most importantly, an agreement of cooperation with Stockholm University included additional funding intended for the support of scientific Research Groups and Networks.

ISP received or participated in the reception of ten high-level delegations from different countries.

Challenges and Opportunities

The ISP proposal to Sida for continued financial support was postponed to 2012, which has delayed the planned start of support to a number of new activities (scientific Research Groups and Networks) invited to apply for funding in 2011.

In an evaluation of ISP in 2011, initiated and procured by Sida, the approach and operation of ISP in the broad strategic context of the role of science in development was strongly supported. However, a number of areas were pointed out where improvement is needed, and which ISP will attend to.

Efforts to stimulate female participation in the activities of supported scientific Research Groups and Networks need to continue.
SECTION 2: ORGANISATION

International Science Programme
Uppsala University
P. O. Box 549
SE-751 21 UPPSALA
SWEDEN

Visiting address: Ångström Laboratory, Lägerhyddsvägen 1 (Polacksbacken), Uppsala
Phone: +46 18 471 3575 | Fax: +46 18 471 3495
Email: isp@isp.uu.se
Internet: www.isp.uu.se

Sida Agreement: 75000514 / 2008-001272
SECTION 3: OBJECTIVES AND RELEVANCE

3.1 Objective

To contribute to the development of active and sustainable environments for higher education and scientific research in developing countries, within the basic sciences chemistry, mathematics, and physics,

3.2 Relevance for development cooperation

An increased domestic capacity for research and higher education in basic sciences has a long-term impact on economic growth and poverty alleviation, driven by an increasingly knowledge-based society. A country's domestic competence in basic sciences is crucial for:

• an increased quality of education, at all levels,
• the development of scientific, critical thinking based on reproducible evidence
• the development of applied sciences to meet local needs,
• the development of technology, innovation, and engineering on a local ownership basis
• the adoption of a sustainable use of natural resources, and
• the engagement in business and global trade at a level of knowledge which matches global partners, industry and investors
• the development of scientific excellence on own terms.

3.3 Alignment and development of the ISP Objective

3.3.1 Alignment with the goals and strategies of Uppsala University

ISP operation is aligned with the overarching goals and strategies of Uppsala University, stating that the university shall:¹

• Pursue research and education of the highest quality;
• Play an active role in global society, promoting development and innovation;
• Be far-sighted and open to change in all facets of its work; and
• Contribute to making our world a better place.

Furthermore, ISP activities are well in line also with the Uppsala University program for internationalization,² and the Uppsala University action plan for internationalization 2010 –

¹ http://www.uu.se/en/node1346
2012. In the program for internationalization, objectives and strategies are in three areas, all having strong relevance for ISP:

- Internationalization for eminent research;
- Internationalization for first class education; and
- Internationalization for a developed university environment.

### 3.3.2 Alignment with the Swedish government’s strategy

The Swedish development support policy is based on the Policy for Global Development, established by the Swedish Parliament in 2003.

In 2010, ISP started to develop its objective to more clearly demonstrate the fit to the Strategy for Sida’s support for development research cooperation 2010–2014, adopted by the Swedish government in October 2009. This was documented in the proposal for continued support, provisionally submitted to Sida 2 October following an ISP Board decision 25 September.

The overall objective of the Swedish research support is to strengthen and develop research of relevance to the fight against poverty in developing countries. In order to achieve the overall objective under Sweden’s development research policy, Sida is to focus on three specific areas:

1. Research capacity building in developing countries and regions
2. Research of relevance to developing countries
3. Swedish research of relevance to developing countries

The activity of ISP falls mainly within the first two of the specific areas, the respective objectives of which are:

- Partner countries and regional research actors are better able to plan, produce and use research in the fight against poverty; and
- Increased production of research relevant to the fight against poverty in developing countries.

In 2011, the ISP overall objective was expanded to: to increase the production and use of results relevant for the fight against poverty by researchers in the basic sciences in developing countries.

The specific objectives are:

- To increase the capacity to plan and carry out research in the field of basic sciences in developing countries and regions.
- To increase the production of high quality research results in basic sciences in developing countries.
- To increase the application of research results in basic sciences useful for the fight against poverty in developing countries.

The ISP Board established the expanded and specific objectives on 25 September 2011.

---


SECTION 4: STRUCTURE AND OPERATION

4.1 Structure

The International Science Program (ISP) is at the Faculty of Science and Technology at Uppsala University. It was initiated in 1961 and now consists of three subprograms:

- International Programme in the Physical Sciences (IPPS, since 1961)
- International Programme in the Chemical Sciences (IPICS, since 1970)
- International Programme in the Mathematical Sciences (IPMS, since 2002)

ISP Board

In 2011, the ISP Board met once, Sunday 25 September. The Board had the following composition:

- Professor Joseph Nordgren, Vice-Rector, Uppsala Univ., Chairman (until 25 September)
- Professor Bengt Gustafsson, Dept. Physics and Astronomy, Uppsala Univ., Vice Chairman
- Professor Claes-Göran Granqvist, Dept. Engineering Sciences, Uppsala Univ.
- Professor Kersti Hermansson, Dept. Materials Chemistry, Uppsala Univ.
- Dr Irene Kolare, Office for Science and Technology, Uppsala Univ.
- H.E. Professor Jean-Pierre Ezin, Commissioner of Human Resources, Science and Technology, African Union Commission
- Professor Mohamed H.A. Hassan, former Executive Director of the Academy of Sciences for the Developing World (TWAS)
- Professor Elzbieta Glaser, Dept. Biochemistry and Biophysics, Stockholm Univ.
- Professor Michael Passare, Dept. Mathematics, Stockholm Univ. (until 15 September, when he tragically passed away)
- Professor Sune Svanberg, Atomic Physics, Lund Univ.
- Ms Marta Kiesel, representative of the student's organisations, Uppsala Univ.
- Dr Linnea Sjöblom, representative of the personnel unions, Uppsala Univ.

Deputy Board members, Uppsala University:

- Professor David Sumpter, Dept. Mathematics
- Professor Pher Andersson, Dept. Biochemistry and Organic Chemistry
- Professor Vernon Cooray, Dept. Engineering Sciences

A new Chairman of the Board, Professor Ulf Danielsson, Vice-Rector, Uppsala University, was appointed from 26 September.

ISP Executive Committee

The ISP Executive Committee met 22 February, 9 May, 29 August, and 24 October, and had the following composition:

- Professor Bengt Gustafsson, Chairman
- Professor Claes-Göran Granqvist, Vice Chairman
• Professor David Sumpter
• Dr Irene Kolare
• Professor Kersti Hermansson
• Mr Kay Svensson, International Coordinator, Uppsala University co-opted
• Associate Professor Ernst van Groningen, Director of IPPS
• Dr Leif Abrahamsson, Director of IPMS
• Associate Professor Peter Sundin, Director of IPICS

The ISP Scientific Reference Groups

**IPICS**

The IPICS reference group, having its annual meeting in Uppsala 22 – 23 September, had the following composition:

- Professor Afaf Kamal-Eldin (Food Chemistry), United Arab Emirates Univ.
- Professor Ameenah Gurib-Fakim (Natural Products Chemistry), CEPHYR Ltd, Ebene, Mauritius
- Professor emeritus Lars Ivar Elding (Inorganic and Coordination Chemistry), Lund Univ.
- Professor Prapon Wilairat (Molecular Biology and Biochemistry), Mahidol Univ., Thailand

**IPMS**

The IPMS reference group, having its annual meeting in Uppsala 27 – 28 September, had the following composition:

- Professor emeritus Christer Kiselman, Uppsala University, Uppsala, Sweden
- Professor Tom Britton, Stockholm University, Stockholm, Sweden
- Professor Mohamed El Tom, Garden City College for Science and Technology, Sudan

**IPPS**

The IPPS reference group, having its annual meeting in Uppsala 27 – 28 September, had the following composition:

- Professor Ewa Wäckelgård, Uppsala Univ.
- Professor Krishna Garg, Univ. Rajasthan, India
- Professor Magnus Willander, Linköping Univ.
- Professor Roland Roberts, Uppsala Univ.
- Professor Warawutti Lohawijarn, Prince of Songkla Univ., Thailand

**ISP Staff**

In 2011, ISP had the following staff members:

*Scientific staff*

- Assoc. Prof. Peter Sundin Head of ISP, Director of IPICS
- Assoc. Prof. Ernst van Groningen Deputy Head of ISP, Director of IPPS
- Dr Leif Abrahamsson Director of IPMS
- Dr Linnéa Sjöblom Assistant Director of IPICS; Assistant Director of IPPS (until 30 April)
- Assoc. Prof. Carla Puglia, Assistant Director of IPPS (from 1 May)
Administrative staff

- Ms Zsuzsanna Kristófi, Head of the Administrative Section
- Ms Pravina Gajjar, Administrator
- Ms Solveig Lindberg, Administrator
- Mr Hossein Aminaey, Administrator
- Ms Elisabeth Johannesson, Administrator (until 30 July)
- Dr. Peter Roth, Administrator (from 1 June)

Scientific coordinators (part-time)

- Prof. Sven Halldin, Department of Earth Sciences, Uppsala University, Coordinator of the CSUCA project
- Dr Paul Vaderlind, PACM Coordinator (from 1 July)

4.2 Operation

ISP provides long-term support directed to Research Groups and Scientific Networks. The work is carried out in close cooperation with research groups at more advanced host institutions. Although Uppsala University is the base of the operation, ISP functions as an international program and host laboratories may be at other Swedish universities, in other Nordic and European countries, and in the regions. This is to meet the requests from developing countries on their own terms. ISP also handles other research programs, organised by Sida.

The operation of ISP is regulated in an ordinance established by the Swedish government in 1988 (UHÄ-FS 1988:18; SFS 1992:815), through the then Office of Universities and Higher Education (Universitets- och högskoleämbetet; UHÄ), and is governed by an internationally composed board.

4.3 Evaluation 2011

In 2011 an Australian team evaluated ISP on request by Sida, following Terms of Reference" developed by Sida in consultation with Uppsala University. The “GHD Report on the Evaluation of the International Science Programme” was finalized 30 September.\(^5\)

\(^5\) http://www.isp.uu.se/ISPEvaluation2011.pdf
SECTION 5: PROGRAM-WIDE RESULTS

5.1 Activities

To continue contributing to the development of active and sustainable environments for higher education and scientific research in developing countries, within the basic sciences chemistry, mathematics, and physics, the following activities were supported (sections 5.1.1 and 5.1.2) and the following Sida coordination assignments carried out (Section 5.1.3). Other ISP activities are given in Section 5.1.4.

5.1.1 Research Groups

The following research groups were supported in current Swedish focus countries.6

In Bangladesh a research group at the Department of Chemistry, University of Dhaka (IPICS BAN:04) was supported to work in the field of environmental and food contamination chemistry. Research collaboration between Bangladesh University of Engineering and Technology (BUET), and the Atomic Energy Centre, Dhaka, (IPPS BAN:02) was supported in the field of magnetic materials. A first year of support to medical physics was provided to a group at the Department of Biomedical Physics & Technology, University of Dhaka (IPPS BAN:04).

In Burkina Faso two research groups at the Department of Chemistry, University of Ouagadougou, were supported, one on natural products research (IPICS BUF:01) and one on clay mineralogy (IPICS BUF:02).

In Cambodia a research group at the Department of Physics (IPPS CAM:01) at the Royal University of Phnom Penh (RUPP) was supported, and a first year of support was provided to a research group at the RUPP Department of Chemistry, in the field of environmental chemistry (IPICS CAB:01). In addition, IPMS provided a second year of pilot support to the RUPP Department of Mathematics.

In Ethiopia support was provided again to the research groups previously phased out of support following the agreement with Sida in 2008. The decision to restart support followed a review of the situation in the Annual Review Meeting with Sida in June 2010. Two research groups were supported in the field of conducting polymers (IPICS ETH:01 and IPPS ETH:01), one in the field of mathematics (IPMS ETH:01), and one in the field of seismology (IPPS ETH:02).

In Kenya IPPS supported five research groups. Four of these are at University of Nairobi, one of which received full support for the first time, and one is at Moi University. They work in the fields of X-ray fluorescence (IPPS KEN:01/2), nanostructured solar cells (IPPS KEN:02), photovoltaics (IPPS KEN:03), applied laser physics (IPPS KEN:04), and seismology (IPPS KEN:05). IPICS provided a first year of support to two research groups at the Department of Chemistry, University of Nairobi, in the fields of coordination chemistry (IPICS KEN:01) and natural products chemistry (IPICS KEN:02), respectively.

6http://www.sweden.gov.se/sb/d/9382/a/86595
In Mali a research group on clay mineralogy at Department of Chemistry, University of Bamako (IPICS MAL:01) was supported. IPMS provided a second year of pilot support to the Department of Mathematics, and IPPS provided a first year of full support to a research group at the Department of Physics, both at the University of Bamako (IPPS MAL:01).

In Uganda support was provided again to a research group in physics (IPPS UGA:01/1); materials science previously phased out of support following the agreement with Sida in 2008. The decision to restart support followed a review of the situation in the Annual Review Meeting with Sida in June 2010.

In Zambia a research group in the field of materials science at the Department of Physics, University of Zambia, (IPPS ZAM:01) was supported, and a research group at the Department of Chemistry at the same university, working on conducting polymers (IPICS ZAM:01), received a first year of support.

In total, 25 research groups were supported in 8 of the 12 Swedish focus countries (Table 1). It can be noted, however, that support in the field of mathematics was provided also to the University of Ouagadougou, Burkina Faso, but within the scope of the network IPPS BURK:01 (PDE Modeling and Control; see Section 5.1.2). This network includes mathematics departments also at universities in Mauritania and Senegal. Similarly, mathematics groups at Makerere University, Uganda, University of Nairobi, Kenya, University of Dar es Salaam, Tanzania, and University of Zambia, are supported through the East African Universities Mathematics Program (EAUMP; see Section 5.1.2). EAUMP includes also the National University of Rwanda and the Kigali Institute of Science and Technology, both in the focus country Rwanda.

### Table 1. Swedish focus countries with research groups supported by ISP.

<table>
<thead>
<tr>
<th>Country</th>
<th>IPICS</th>
<th>IPMS</th>
<th>IPPS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Cambodia</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Kenya</td>
<td>2</td>
<td>0</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Mali</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Uganda</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Zambia</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
<td><strong>3</strong></td>
<td><strong>13</strong></td>
<td><strong>25</strong></td>
</tr>
</tbody>
</table>

The following research groups were supported in countries not belonging to the category in Swedish focus.

In Laos two research groups at the Department of Chemistry, National University of Laos (NUOL) were supported, working in organic environmental chemistry (IPICS LAO:02), and in water chemistry (IPICS LAO:03), respectively. Also, a research group in geoscience was supported at NUOL Department of Physics (IPPS LAO:01). In 2011, all these groups received
their final year of support on funding provided by Sida, except for IPPS LAO:01 where a student on sandwich training in Thailand is planned to be supported until graduation in 2013.

In **Zimbabwe**, IPICS supported three research groups. One works in the field of pharmacokinetics-pharmacodynamics, at the African Institute for Biomedical Science and Technology (IPICS AiBST), Harare (associated with University of Zimbabwe), another in the field of biomolecular interactions (IPICS ZIM:01), at the Department of Biochemistry, University of Zimbabwe, Harare. The third is working in the field of biochemical toxicology (IPICS ZIM:02), at the Department of Environmental Science and Health, National University of Science and Technology in Bulawayo.

In total, 6 research groups were supported in these countries, 3 in Laos (2 by IPICS, 1 by IPPS) and 3 in Zimbabwe (all by IPICS) (Table 2). In 2011, the research groups in Laos all had their final year of ISP support under the Sida agreement, with the exception of IPPS LAO:01 where a student on sandwich training in Thailand will be supported until graduation in 2013.

**Table 2. Swedish non-focus countries with research groups supported by ISP**

<table>
<thead>
<tr>
<th>Country</th>
<th>IPICS</th>
<th>IPMS</th>
<th>IPPS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laos</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>0</td>
<td>1</td>
<td>6</td>
</tr>
</tbody>
</table>

**5.1.2 Scientific Networks**

*Scientific networks are important to reach a “critical mass” in a scientific field to obtain long-term stability. In the Sida Assessment of the ISP Application for support January 2008 to December 2011 it is stated that “Support to networks and resource centers continues. The thematic choice, goals, timeframes, budgets, hosts of programmes, involved Swedish institutions etc will however have to be further defined (...).” These conditions were addressed at an international conference organised in Addis Ababa in September 2009. Sida separately financed the conference and the proceedings of the event were published in 2011:*


*In 2011, ISP was invited to present its support to scientific networks at the International Workshop: Bioprocessing, Policy and Practice: Conservation and use of Medicinal plants of the Small Island Developing States (SIDS) of the Indian Ocean and Madagascar, Ebene, Mauritius, 20 to 22 April. The contribution was published the same year:*


*In 2011, ISP supported the following networks.*

7http://uu.diva-portal.org/smash/get/diva2:393463/FULLTEXT01
**African Laboratory for Natural Products** (IPICS ALNAP), with the objective to cooperate in natural products research between laboratories in Uganda, Ethiopia, Rwanda and Burundi.

**African Network for the Chemical Analysis of Pesticides** (IPICS ANCAP), with the objective to safeguarding public health and the environment, and ensuring the safety of African agricultural and aquatic products, making them competitive on the world market, and thereby contributing to the continent’s poverty eradication endeavors.

**African Spectral Imaging Network** (IPPS AFSIN), with the objective to bring the network's research groups to international standard in the field of spectroscopy and spectral imaging, with application in medicine, environment and agriculture.

**Asian Network of Research on Antidiabetic Plants** (IPICS ANRAP), with the objective to develop cooperation between scientists working in the field of antidiabetic plant research.

**Eastern African Universities Mathematics Programme** (IPMS EAUMP), with the objective to enhance postgraduate, and particularly PhD, training to build capacity in universities in the region, and training advanced mathematics researchers needed in other socio-economic sectors. The network consists of the department of mathematics at Univ. Dar es Salaam (Tanzania), at Univ. Nairobi (Kenya), at Makerere Univ.(Uganda), at Univ. Zambia (Zambia), at National Univ. Rwanda (Rwanda), and at Kigali Institute of Science and Technology (Rwanda).

**Eastern and Southern Africa Regional Seismological Working Group** (ESARSWG /IPPS AFR:01), with the objective to monitor seismic activities of the East Africa Rift System through operation of seismic stations in nine countries and collectively analyse data. This will promote building regional capacity with regard to both equipment and personnel to enable seismology related research to be carried out.

**Latin American Network for Research in Bioactive Natural Compounds** (IPICS LANBIO), with the objective to promote natural product research in South America.

**Materials Science and Solar Energy Network for Eastern and Southern Africa** (MSSEESA/IPPS AFR:03), with the aim to make use of more costly equipment in an efficient way and to strengthen the quality of physics education and to harmonize the MSc and PhD programs in the region.

**Natural Products Research Network for Eastern and Central Africa** (IPICS NAPRECA), with the objective to initiate, develop and promote research in the area of natural products chemistry in Eastern and Central Africa.

**Network for Analytical and Bioassay Services in Africa** (IPICS NABSA), with the objective to give other African scientists access to the analytical and laboratory facilities and equipment that exists in the Dept. Chem., Univ. Botswana.

**Network of Instrument Technical Personnel and User Scientists of Bangladesh** (IPICS NITUB), with the objective to improve the capabilities in handling, maintaining, troubleshooting and repairing scientific instruments in Bangladesh.

**PDE, Modeling and Control** (IPMS BURK:01), aiming at applications of mathematics, but also to strengthen other areas of mathematics. The network includes joint research, with links to the international scientific community and mathematicians in the West African region. The network consists of researchers in mathematics at Univ. Ouagadougou (Burkina Faso), at Gaston Berger Univ. (Senegal), at Univ. of Nouakchott (Mauritania), and at Univ. Cocody-Abidjan (Ivory Coast). In 2011 researchers at Univ. Bamako (Mali) also joined the network.
**Southern and Eastern Africa Network for Analytical Chemists** (IPICS SEANAC), with the objective to promote analytical chemistry in the region by research collaboration, training, and information sharing, to facilitate inventory, access, operation, maintenance and repair of analytical equipment, and to collaborate with organizations of similar aims.

**West African Biotechnology Network** (IPICS ABN/RABIO TECH), with the objective to ensure and reinforce research training in biotechnology, and to share research on local challenges. The network aims at limiting the brain drain of the South towards North.

In total, 14 scientific networks were supported (Table 3).

**Table 3. Scientific networks supported by ISP, by region.**

<table>
<thead>
<tr>
<th>Region</th>
<th>IPICS</th>
<th>IPMS</th>
<th>IPPS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>6</td>
<td>2</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Asia</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Latin America</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
<td><strong>2</strong></td>
<td><strong>3</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

**5.1.3 Sida Coordination Assignments**

*This report generally regards only the operation of ISP according to Sida Agreement 75000514 / 2008-001272. The collaboration with Sida in 2010, however, included the following commissioned coordination assignments, specified by separate agreements.*

**Central America.** The CSUCA (Consejo Superior de Universidades Centroamericanas) program in Central America originally comprised the seven countries in the region plus the Dominican Republic. The theme is "Nature-induced disaster mitigation in Central America" and the program is devoted to research capacity building in the thematic field (including both geosciences and social sciences). Sida supports the program since 2008. The Swedish side of the activity is administered and coordinated by ISP in collaboration with Department of Earth Sciences at Uppsala University.

In 2011, five Master Students participated, one each from Belize, Costa Rica, Guatemala, Honduras, and Panama. Also, four PhD students participated, one from El Salvador, two from Guatemala and one from Nicaragua. All were at the Department of Earth Sciences at Uppsala University, except for the student from El Salvador who was at Chalmers University of Technology (Gothenburg) and the student from Nicaragua who was at Lund University. During the year four students obtained their MSc degree within the framework of the program, two of these are presently continuing their PhD studies.

**Ethiopia.** At Addis Ababa University a bilateral Sida project in Pharmacy is coordinated. It started in 2005. In 2011 two PhD students remained in the program, and in March one of them, Mr. Teshome Leta Aboye, successfully defended his thesis: "Engineering of the ultra-stable cystine knot framework of microproteins; Design, chemical synthesis and structural studies." The students were at the Departments of Medicinal Chemistry and Pharmaceutical Biosciences at Uppsala University.
**Mozambique.** The new bilateral agreement with Universidad Eduardo Mondlane (UEM), Maputo Mozambique, was signed in 2011. In October 2011 ISP was assigned the Swedish coordination of the whole bilateral programme, including 12 subprogrammes with collaborating partners in Sweden. The agreement for this coordination, between Sida and ISP, covers the years 2011 – 2013, with a possible extension for the period 2014 – 2015. The number of students to be trained in Sweden is approximately 100. The Swedish institutions involved in 2011 were Chalmers, Gothenburg University, Karolinska Institute, Luleå Technical University, Lund University, Örebro University, the Royal Institute of Technology (KTH), Stockholm University, the Swedish Institute for Food and Biotechnology (SIK), the Swedish Institute for Communicable Disease Control (SMI), the Swedish University of Agricultural Sciences (SLU), Umeå University, and Uppsala University. Contacts were also made with Mälardalen University for students planned to start in 2012.

Apart from this coordination ISP is also coordinating the activities in Sweden of the subprogramme in mathematics, which is part of the bilateral programme described above.

**Tanzania.** ISP coordinates the bilateral program with the Faculty of Science at University of Dar es Salaam (UDSM) in Tanzania. A new program phase was initiated in 2010, following an agreement with Sida in 2009. The coordination concerns support to the Earth Science Programme at UDSM.

In 2011, ISP was asked also to engage in the coordination of the Food Security Programme at the College of Engineering and Technology, UDSM. Discussions on how to facilitate activities were carried out at a preparatory visit to UDSM in August.

**Uganda.** At Makerere University, Kampala, Uganda, ISP continued to coordinate the subprograms with DICTS, Library, and the Faculty of Science (the latter was reorganized in 2011 to the College of Natural Sciences).

### 5.1.4 Other Activities

**Collaboration with other organisations**

ISP interacted in particular with the following organisations.

*International Foundation for Science (IFS)*

A meeting was held in February with the new IFS Director, Dr. Graham Haylor, to discuss further cooperation. In October, ISP participated in the IFS Strategy Implementation Workshop.

*Pan African University (PAU)*

ISP and Uppsala University sponsored participation of experts in PAU Regional Curriculum Development Workshops held in Nairobi, Kenya, in May and in Addis Ababa, Ethiopia, in November.

*Southern African – Nordic Centre (SANORD)*

Uppsala University is a SANORD member and ISP participated and presented its work at the SANORD conference in Johannesburg, South Africa, in November.
Exhibition

A public ISP exhibition and lecture was arranged 10 September, at Museum Gustavianum, Uppsala, as an event of the Uppsala Culture Night.

ISP 50th Anniversary

ISP celebrated 50 years of activities since the start of the "International Seminar for Research and Education in Physics" 1 September 1961. A seminar, "Experiences and Way Forward" was held in Uppsala 26 September. Invited speakers were:

- Professor Kerstin Sahlin, Deputy Vice-Chancellor at Uppsala University.
- H. E. Dr. Mohamed Gharib Bilal, Vice President of the United Republic of Tanzania.
- Professor Bo Sundqvist, former Vice-Chancellor at Uppsala University, and former Chairman of the ISP Board.
- Professor C. N. R. Rao, Jawaharlal Nehru Centre for Advanced Scientific Research, India.
- Mr Tomas Kjellqvist, Research Manager at Blekinge Institute of Technology, and former director of the Secretariat for Research Cooperation at Sida, Sweden.
- Professor Collen Masimirembwa, President and Founder of the African Institute of Biomedical Science and Technology (AiBST), Zimbabwe.
- Ms Betty Nannjonga, PhD student from Makerere University, Uganda.
- Professor Jenny Ruales, Escuela Politécnica Nacional, Ecuador.
- Professor Hans Rosling, Karolinska Institutet, Sweden.
- Dr Anders Granlund, Head of the Unit for Research Cooperation, Sida, Sweden.
- Professor Sune Svanberg, Atomic Physics Division, Lund University, Sweden.

New Agreements

In 2011, ISP entered into the following new agreements:

Al Baha University, Al Baha, Saudi Arabia

A "Service Contract of Academic Support between Al Baha University (Saudi Arabia) and Uppsala University, International Science Programme (ISP), Sweden" was signed together with a "Service Contract Specification" valid up to 31 December 2011. The objective of the agreement is for ISP to provide "services contributing to the improvement of academic programs, training, research activities, and educational quality assurance within the fields of science and technology". Important aims are also "to promote friendship and mutual comprehension" and "particular attention is on female students and staff members at Al Baha University, with the aim to expose the female students and staff members to international research and teaching cultures".

In March 2011 a teacher delegation from Uppsala University (1 female and 2 males) visited Al Baha together with the head of ISP to discuss strategies for realizing the objectives. As a result of the discussion, the College of Science at Al Baha University introduced a "preparatory year", starting in September 2011, to prepare BSc graduates in Computer Science (5 female and 3 male) and Mathematics (4 female and 3 male) for master’s education in collaboration with Uppsala University.

http://beta.uu.se/isp/isp50/Program
In September 2011, Dr. Ghanem Al-Ghamdi, Dean of the College of Science and Dr. Abdulaziz Al-Ghamdi, Dean of Preparatory Year and Chair of the Department of Mathematics, College of Science, at Al Baha University, participated in the 50th anniversary of ISP and visited several scientists at academic institutions in Uppsala and Stockholm.

The Service Contract Specification was renewed per 31 December 2011, and a second term of the collaboration was extended to 31 December 2014.

National Mathematical Center, Abuja, Nigeria

An “Agreement between the International Science Programme (ISP), Uppsala University, Sweden and the National Mathematical Centre (NMC), Abuja, Nigeria”, was signed for a three-year term of validity. The objectives include developing academic links and promoting the exchange of postgraduate students.

In March Uppsala University received a delegation from NMC (Prof. Sam O. Ale, Director General; Mr. Clement O. Adeyemo, Registrar; Mr. Chukwunwike Ezekpeazu, Bursar, and Mr. Olufunminiyi Abiri, Research Fellow). During the visit, Mr. Abiri was interviewed by a tentative PhD supervisor from Luleå University of Technology (LTU), resulting in a specific agreement between NMC, ISP and LTU for the PhD training of Mr. Abiri in the field of materials science at LTU, nominally up to June 2015.

In October 2011, the head of ISP together with a mathematics lecturer from Stockholm University (part time employed at ISP) visited NMC to discuss further activities within the frame of the cooperation.

Royal University of Phnom Penh, Phnom Penh, Cambodia

A general “Agreement for Academic Exchange and Cooperation between Uppsala University, Sweden, and Royal University of Phnom Penh, Cambodia” was signed with the objective to promote cooperation including academic exchange and joint activities. The agreement was initiated as a consequence of ISP support to research at the RUPP Faculty of Science, to be valid for an initial period of five years.

Stockholm University, Faculty of Science, Stockholm, Sweden

As a result of an initiative in 2010 by the Stockholm University representative Prof. Mikael Passare of the ISP Board, an "Agreement of Cooperation between Faculty of Science, Stockholm University, Stockholm, Sweden, and the International Science Programme (ISP), Uppsala University, Uppsala, Sweden” was signed in December 2010 and implemented from 2011 to be valid for five years. The overall objective is "to further develop academic relations in the collaboration with third parties in developing countries in the fields of science that is of common interest" to the signatories. Funding provided by Stockholm University was used partly to develop the Pan African Centre for Mathematics (PACM), following an agreement between Stockholm University and University of Dar es Salaam, Tanzania, and partly to strengthen ISP’s engagement with Royal University of Phnom Penh, Cambodia, and National University of Laos, Vientiane, Laos.

To develop the cooperation a Management Committee was formed, that met four times in 2011 to establish and direct activities.
University of Ottawa, Ottawa, Canada

A “Letter of Intent between the University of Ottawa, and Uppsala University, the International Science Program” was signed with the objective to develop academic links and exchange.

University of Zambia, Lusaka, Zambia

A general “Agreement for Academic Exchange and Cooperation between University of Zambia, Lusaka, Zambia, and Uppsala University, Uppsala, Sweden” was signed with the objective to promote cooperation including academic exchange and joint activities. The agreement was initiated as a consequence of ISP support to research at the UNZA Faculty of Science, to be valid for an initial period of five years.

Sida Meetings

Meetings with Sida were held 14 February and 21 June, the latter being the Annual Review Meeting. Additional meetings were held in connection to the evaluation.

In November, two ISP staff members participated in the Sida event “RBM Lessons Learnt”, Härnösand, Sweden.

Proposal to EU

A support action proposal, “East African Stakeholder partnerships in deployment of e-infrastructure Lighthouse Demonstrators”, was submitted to the call FP7-ICT-2011-7, with partners at the Inter-University Council for East Africa, Uganda, the International Livestock Research Institute, Kenya, and in Sweden the Karolinska Institute, the Karolinska University Hospital, the Royal Institute of Technology, and the Swedish University of Agricultural Sciences. The proposal did not receive support.

Visiting Delegations

ISP received or participated in the reception of the following delegations.

Bangladesh

Visit 9 February of the Bangladesh Ambassador to Sweden, H.E. Mr Gousal Azam Sarker.

Burkina Faso

Visit 25 January by:

• M. Maxime Somé, Ministre délégué auprès du Ministre des Enseignements Secondaire et Supérieur, Chargé de l’Enseignement Technique et de la Formation Professionnelle
• Prof. Hamidou Boly, Président de l’Université Polytechnique de Bobo-Dioulasso
• Prof. Jean Koulidiatj, Président de l’Université de Ouagadougou
• M. Philippe Palenfo, Direction de la coopération décentralisée du Ministère de l’Économie et des Finances.
Cambodia
Visit 13 May by:
• H. E. Nath Bunroeun, Secretary of State
• Mr. Mak Ngoy, Deputy Director General. Department of Higher Education
• Mr. Om Sethy, Director of the Information and ASEAN Department
• Mr. Sam Sereyrath, Director of Planning Department
• Mr. Magnus Saemundsson, Sida

Ethiopia
Visit 25 March by representatives for School of Pharmacy, Addis Ababa University:
• Dr. Kaleab Asres Abai
• Prof. Tsige Gebre-Mariam Wolde-Mariam

Kenya
Visit 19 October from Kenya’s Embassy in Sweden:
• Ms. Purity W. Muhind, Kenya’s Ambassador to Sweden
• Dr. Beth Maina
• Ms. Rose Mugo

Nigeria
Visit 7-9 March by representatives of the National Mathematical Center, Abuja (see New Agreements).

Saudi Arabia
Visit 7 June by the Cultural Attaché Prof Dr Fahad Ibrahim Alhabeeb, and Ms. Afaf Touri, Academic Affairs Coordinator, Kingdom of Saudi Arabia Embassy, Berlin, Germany.
Visit 25 - 29 September by representatives from Al Baha University (see New Agreements).

South Africa

Tanzania
Visits 5 May and 9 June (in preparation for the participation of H.E. Dr Mohamed Gharib Bilal, Vice President of the United Republic of Tanzania, in the 50th Anniversary of ISP):
• Mr. Muhammed Mzale, Ambassador, Embassy of Tanzania, Sweden
• Mr. Jacob Msekwa, Embassy of Tanzania, Sweden, and
• Mr. Jakob Ström, Deputy Director; Africa Department, Swedish Ministry for Foreign Affairs.

Uganda
Visit 3 March by Professor Eli Katunguka-Rwakishaya, Director, School of Graduate Studies, Makerere University, Kampala.
5.2 Achieved Outcomes and Outputs

In 2011, ISP supported 31 research groups and 14 scientific networks (Table 4) spending in total 19,377 kSEK on 1) training of staff and students (long-term, e.g. on “sandwich” basis), 2) regional collaboration, training, workshops, etc., 3) development of the scientific activities (comprising investments in instrumentation, consumables, computerware, literature, chemicals, dissemination of results, etc.), and 4) scientific exchange (short term visits to collaborators outside the region, conferences, workshops, etc.). Supported activities graduated 94 Master’s students and 15 PhDs, disseminated 398 scientific contributions as publications or at conferences, and arranged 42 meetings.

The total expenditure by supported activities in 2011 was approximately 1.9 million EUR (at the rate 10 SEK =1 EUR). In this year the following total outcome was achieved per million EUR spent:

- 10 PhD graduations, plus
- 50 Masters graduations, plus
- 89 Scientific publications, 41% of which in journals with “Impact Factors”, plus
- 94 Conference contributions, 41% of which to international conferences, plus
- 23 meetings organised,
- plus development of technical resources, etc. within research groups and networks.

It should be remembered, however, that the outcome – in particular with regard to graduated students and scientific publications – is a result of a long-term engagement and cannot be attributed to a single year of support. Therefore the achievements are better viewed on a longer time frame. In the nine-year period 2003 – 2011, support was provided to up to 50 research groups and 21 scientific networks annually, with a total, annual expenditures averaging approximately 2 million EUR. Over this period, the following total outcome was achieved per million EUR spent:

- 12 PhD graduations, plus
- 50 Masters graduations, plus
- 87 Scientific publications, plus
- 113 Conference contributions, plus
- 22 meetings organised.

Recently, longer-term achievements were investigated. It could be observed that in the last three decades (from about 1985), regardless of subject program (IPICS, IPMS, IPPS) and time interval (> 10 years) considered, the total long-term outcomes per “million EUR” spent by research groups and networks were in the following ranges:

- 6 – 14 PhD graduations, plus
- 27 – 50 Masters graduations, plus
- 59 – 116 Scientific publications, plus
- 47 – 127 Conference contributions, plus
- 11 – 21 meetings organised.

---

9 See Section 5.5.
10 P. Sundin, L. Abrahamsson and E. van Groningen; The International Science Programme at Uppsala University: 50 years experience of capacity building in basic sciences in developing countries. Manuscript submitted to the 3rd SANORD International Symposium, Aarhus University, Denmark, 6 – 7 June 2012.
Thus, future ISP support operated similarly can be expected to result in a similar and predictable outcome with regard to development of academic capacity and dissemination of scientific findings.

**Table 4.** Expenditures and number of ISP supported activities 2011, students registered, and outcome in terms of student graduations and dissemination (L.Am. = Latin America)

<table>
<thead>
<tr>
<th>Expenditures</th>
<th>Africa</th>
<th>Asia</th>
<th>L. Am.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spending by research groups and networks; kSEK:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Training</td>
<td>3,452</td>
<td>766</td>
<td>0</td>
<td>4,218</td>
</tr>
<tr>
<td>- Regional collaboration</td>
<td>3,512</td>
<td>345</td>
<td>295</td>
<td>4,152</td>
</tr>
<tr>
<td>- Development</td>
<td>6,996</td>
<td>2,373</td>
<td>0</td>
<td>9,369</td>
</tr>
<tr>
<td>- Scientific Exchange</td>
<td>1,153</td>
<td>485</td>
<td>0</td>
<td>1,638</td>
</tr>
<tr>
<td><strong>Total expenditures (kSEK)</strong></td>
<td><strong>15,113</strong></td>
<td><strong>3,969</strong></td>
<td><strong>295</strong></td>
<td><strong>19,377</strong></td>
</tr>
<tr>
<td>Number of Supported Activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research Groups in Focus Countries</td>
<td>19</td>
<td>6</td>
<td>0</td>
<td>25</td>
</tr>
<tr>
<td>Research Groups in Non-Focus Countries</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Regional Scientific Networks</td>
<td>11</td>
<td>2</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td><strong>Total number of activities</strong></td>
<td><strong>33</strong></td>
<td><strong>11</strong></td>
<td><strong>1</strong></td>
<td><strong>45</strong></td>
</tr>
<tr>
<td>Students</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students registered for PhD (sandwich type)</td>
<td>87</td>
<td>12</td>
<td>1</td>
<td>100</td>
</tr>
<tr>
<td>Students registered for PhD (local)</td>
<td>79</td>
<td>5</td>
<td>1</td>
<td>85</td>
</tr>
<tr>
<td>Percentage of PhD students that are female</td>
<td>23</td>
<td>29</td>
<td>50</td>
<td>24</td>
</tr>
<tr>
<td>Students registered for MSc or MPhil (sandwich type)</td>
<td>30</td>
<td>5</td>
<td>4</td>
<td>39</td>
</tr>
<tr>
<td>Students registered for MSc or MPhil (local)</td>
<td>204</td>
<td>75</td>
<td>1</td>
<td>280</td>
</tr>
<tr>
<td>Percentage of MSc students that are female</td>
<td>24</td>
<td>34</td>
<td>60</td>
<td>27</td>
</tr>
<tr>
<td><strong>Total number of post-graduate students</strong></td>
<td><strong>400</strong></td>
<td><strong>97</strong></td>
<td><strong>7</strong></td>
<td><strong>504</strong></td>
</tr>
<tr>
<td>Percentage of post-graduate students that are female</td>
<td>23</td>
<td>33</td>
<td>57</td>
<td>26</td>
</tr>
<tr>
<td>PhD graduations (sandwich; local)</td>
<td>6; 11</td>
<td>0; 2</td>
<td>0; 0</td>
<td>6; 13</td>
</tr>
<tr>
<td>MSc and MPhil graduations (sandwich; local)</td>
<td>0; 74</td>
<td>1; 21</td>
<td>0; 0</td>
<td>1; 95</td>
</tr>
<tr>
<td>Dissemination</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Publications in International J. (with ISI Impact Factors)</td>
<td>60</td>
<td>9</td>
<td>2</td>
<td>71</td>
</tr>
<tr>
<td>Publications in International Journals (&quot;ISI unlisted&quot;)</td>
<td>67</td>
<td>35</td>
<td>0</td>
<td>102</td>
</tr>
<tr>
<td>Books, Chapters, Popular Publ., Technical Reports, etc.</td>
<td>17</td>
<td>6</td>
<td>1</td>
<td>24</td>
</tr>
<tr>
<td>International Conference Contributions</td>
<td>34</td>
<td>40</td>
<td>1</td>
<td>75</td>
</tr>
<tr>
<td>Regional Conference Contributions</td>
<td>24</td>
<td>33</td>
<td>1</td>
<td>58</td>
</tr>
<tr>
<td>National Conference Contributions</td>
<td>24</td>
<td>23</td>
<td>2</td>
<td>49</td>
</tr>
<tr>
<td><strong>Total dissemination</strong></td>
<td><strong>226</strong></td>
<td><strong>146</strong></td>
<td><strong>7</strong></td>
<td><strong>379</strong></td>
</tr>
<tr>
<td>Conferences/Workshops/Courses arranged</td>
<td>28</td>
<td>16</td>
<td>1</td>
<td>45</td>
</tr>
</tbody>
</table>

5.2.1 Expenditures by Supported Activities

The supported activities in Africa accounted for 78% of the expenditures, the ones in Asia for 16%, and the one in Latin America for about 6% (Table 4; Fig. 1). Most of the financial resources
were spent on development, followed by longer-term training, regional activities, and scientific exchange (Table 4; Fig. 2). Expenditures related to development of technical resources etc. were most pronounced with the research groups and networks supported by IPICS and IPPS (Fig. 3).

![Pie chart showing expenditure distribution by region: Africa 78%, Asia 16%, Latin America 6%.](image1)

**Figure 1.** Distribution of expenditures by region.

![Pie chart showing expenditure distribution by activity: Development 48%, Training 22%, Regional 21%, Exchange 9%.](image2)

**Figure 2.** Distribution of expenditures by activity.

The activities supported by IPMS spent most of the funds on training, and, as the activities supported by IPICS, a considerable portion on regional collaboration. Activities supported by IPPS spent almost as much on training as those supported by IPMS. In all programs, supported activities spent less on scientific exchange, and IPPS-supported activities least on regional collaboration. This agrees with the relatively higher allocations to networks by IPICS and IPMS than by IPPS (Table 6).

Research groups accounted for 58% of the total expenditures, and scientific networks for 42% (Tables 5 and 6). With respect to the distribution of expenditures by research groups (Table 5),
63% were in Swedish focus countries not yet having a Sida bilateral agreement on research development cooperation (Cambodia, Bangladesh, Kenya, Mali, and Zambia; Table 1, Figure 4). ISP-supported research groups in focus countries also having a Sida bilateral agreement on research development cooperation (Burkina Faso, Ethiopia and Uganda; Table 1, Figure 4) accounted for 19% of total expenditures, whereas research groups in non-focus countries (Laos and Zimbabwe; Table 2) accounted for 18%, half to groups in Laos having their last year of ISP support using Sida funding.

In 2011, IPICS supported nine scientific networks, which used 36% of the total network expenditures, while the two networks supported by IPMS spent 47% and the three networks supported by IPPS 17% (Table 6). The larger expenditure by the IPMS-supported networks is mainly due to focus on training (including "sandwich" programs) and regional cooperation, both networks functioning as structures for collaboration between entire university departments.

![Graph](image)

**Figure 3.** Distribution of expenditures by research groups to activities, per subject program.

**Table 5.** Distribution of Research Group expenditures (kSEK [% in each program]) in 2011, to Swedish focus countries with or without Sida bilateral research development programs, and to non-focus countries, with the IPICS, IPMS and IPPS. For support to non-focus countries it is particularly indicated where 2011 was the final year of support

<table>
<thead>
<tr>
<th>Country Category</th>
<th>IPICS</th>
<th>IPMS</th>
<th>IPPS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Non-bilateral” focus country</td>
<td>1,704 [40]</td>
<td>265 [46]</td>
<td>5,057 [79]</td>
<td>7,026 [63]</td>
</tr>
<tr>
<td>Non-focus country (also 2012)</td>
<td>1,035 [24]</td>
<td>0 [0]</td>
<td>0 [0]</td>
<td>1,035 [9]</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>4,291</strong></td>
<td><strong>581</strong></td>
<td><strong>6,366</strong></td>
<td><strong>11,238</strong></td>
</tr>
</tbody>
</table>
Figure 4. Distribution of expenditures by research groups to categories of countries, per subject program.

Table 6. Distribution of expenditures (kSEK) by Scientific Networks in 2011 (AF – Africa; AS – Asia; LA - Latin America), supported by IPICS, IPPS, and IPMS

<table>
<thead>
<tr>
<th>Network</th>
<th>Expend.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPICS</td>
<td></td>
<td>2,936</td>
</tr>
<tr>
<td>ALNAP</td>
<td>(AF)</td>
<td>236</td>
</tr>
<tr>
<td>ANCAP</td>
<td>(AF)</td>
<td>212</td>
</tr>
<tr>
<td>NABSA</td>
<td>(AF)</td>
<td>458</td>
</tr>
<tr>
<td>NAPRECA</td>
<td>(AF)</td>
<td>320</td>
</tr>
<tr>
<td>RABIOTECH</td>
<td>(AF)</td>
<td>455</td>
</tr>
<tr>
<td>SEANAC</td>
<td>(AF)</td>
<td>499</td>
</tr>
<tr>
<td>ANRAP</td>
<td>(AS)</td>
<td>201</td>
</tr>
<tr>
<td>NITUB</td>
<td>(AS)</td>
<td>260</td>
</tr>
<tr>
<td>LANBIO</td>
<td>(LA)</td>
<td>295</td>
</tr>
<tr>
<td>IPMS</td>
<td></td>
<td>3,797</td>
</tr>
<tr>
<td>BURK:01</td>
<td>(AF)</td>
<td>1,211</td>
</tr>
<tr>
<td>EAUMP</td>
<td>(AF)</td>
<td>2,586</td>
</tr>
<tr>
<td>IPPS</td>
<td></td>
<td>1,406</td>
</tr>
<tr>
<td>AFSIN</td>
<td>(AF)</td>
<td>321</td>
</tr>
<tr>
<td>ESARSWG</td>
<td>(AF)</td>
<td>480</td>
</tr>
<tr>
<td>MSSEESA</td>
<td>(AF)</td>
<td>605</td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td>8,139</td>
</tr>
</tbody>
</table>
5.2.2 Student Participation and Achievements

In 2011, totally 185 PhD students (24% of which are female) were active in ISP-supported research groups and scientific networks, of which 54% on a "sandwich" basis (Table 4). During the year 19 PhD students graduated, 4 of them female (Section 5.6.1).

The number of students on Master's level was 319 (27% of which are female), of which 12% on a "sandwich" basis (Table 4). During the year 96 Master's students graduated, 18 of them female (Section 5.6.2).

For ISP as a whole, the proportion of female PhD students (Table 4) was twice as high in 2011 as in 2010, whereas the proportion was the same with regard to Master's students. The chemistry activities generally attracted a higher proportion of female students than the activities in the fields of mathematics and physics (Table 7).

In the eight year period 2003 to 2010, the average proportions of female PhD students were 39%, 11%, and 13%, in IPICS, IPPS, and IPMS, respectively. The corresponding figures for MSc students were 54%, 18%, and 18%, respectively. In 2011, the proportions of female PhD students in IPMS and IPPS are higher than the average of the previous eight-year period.

Table 7. Proportion of female students (%) of all postgraduate students with activities supported by IPICS, IPMS and IPPS, per region.

<table>
<thead>
<tr>
<th>Students and region</th>
<th>IPICS</th>
<th>IPMS</th>
<th>IPPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PhD students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Africa</td>
<td>41</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>Asia</td>
<td>67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Master's students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Africa</td>
<td>28</td>
<td>23</td>
<td>20</td>
</tr>
<tr>
<td>Asia</td>
<td>58</td>
<td></td>
<td>18</td>
</tr>
</tbody>
</table>

5.2.3 Dissemination

In 2011, 41% of the 173 publications were in international journals listed with ISI Impact Factors.11 The remaining publications were in unlisted international, regional and national journals. In addition, 24 publications were made as book chapters, etc, many in the Proceedings of the International Conference on Regional and Interregional Cooperation to Strengthen Basic Sciences in Developing Countries, Addis Ababa, Ethiopia, 1-4 September 2009. The publications are listed in Section 5.5.1 (Chemistry), 5.5.2 (Mathematics), and 5.5.3 (Physics).

In addition, 182 contributions were made to scientific conferences, 41% at the international, 33% at the regional, and 26% at the national level, and 45 scientific events were arranged.

---

11 Thomson Reuters Web of Knowledge; http://admin-apps.webofknowledge.com/JCR/JCR
5.3 Outputs and Outcomes that were not achieved

Expected achievements that were not fulfilled were mainly on the level of the ISP as a whole, but to a limited degree also on the level of supported activities. The influencing factors and issues are discussed in Section 5.4.

5.3.1 What did not happen: ISP Program Level

Proposal to Sida

The ISP proposal to Sida for continued financial support was postponed to 2012. The existing Sida-ISP agreement was extended accordingly, but was restricted to embrace support only to activities already supported in 2011. A consequence of this was that new activities, planned for support from 2012, were not granted funding despite recommendations by the Reference Groups and subsequent approval by the ISP Board. It should be noted, however, that the board decisions on allocations are always taken under the condition that ISP is provided with the necessary funding. Sida had been informed about the planned support to a number of proposed new activities at the Annual Review Meeting in June.

Support to Research Groups in Swedish Non-Focus Countries

In 2011, ISP still supported Research Groups at National University of Laos (chemistry and physics) and at three institutions in Zimbabwe (chemistry). These countries are outside the focus of the current Swedish development support policy.

5.3.2 What did not happen: Supported Activities Level

Invitations for Research Group Support with no Response

Two activities invited by IPICS did not submit applications.

The Department of Food Science and Technology at the Jomo Kenyatta University of Agriculture and Technology (JKUAT) was invited a second time to apply for support in the field of Food Chemistry. However, no application was received in 2011.

Two scientists in the field of pharmacological chemistry, trained to PhD graduation with the Sida bilateral program with Addis Ababa University, were invited to apply for research group support in order to increase the possibility of continuing developing these activities at AAU. One of them did not submit an application. He declined because of a postdoctoral period in USA during 2011 and 2012, but explained himself prepared to submit an application a year later.
Incomplete activity reporting

One research group in Senegal, (IPPS SEN:01), which was phased out of support in 2010, but granted use of funds in balance in 2011, did not submit the requested activity report for the year.

5.4 Analysis of the processes: Influencing Factors & Issues

In addition to discussing causes in the cases of performance under expectations, as accounted for in Section 5.3, the fulfillment of expected achievements is commented below.

Lessons learned in 2011 essentially regard improvement opportunities pointed out in the evaluation report. The reporting of scientific publications by supported research groups and networks by "journal quality", first employed in the 2010 Annual Report to Sida, is an approach appreciated by the evaluators. It will also facilitate evaluation of scientific quality on a longer term. Supported activities have been encouraged to report in more detail outcome in terms of application and use of research results. These requirements are now stronger than in the past, when examples of "outreach" outcomes were asked for in more general terms. However, it may take a while before activity leaders find appropriate forms of recording and reporting such outcome. In addition, the focus of ISP is to stimulate scientific achievements, and the application and use of research results may be less frequent in a short-term perspective. Investigating the impact of ISP support on a longer term may need other tools than annual activity reporting.

Evaluation recommendations regarding this will be followed up in coming years.

5.4.1 Opportunities and lessons learned

Continued development of research and postgraduate education

As summarized in Section 5.2 the results reported for 2010 agree well with those for the longer period 2003 – 2010, taken into consideration that some fluctuation between yearly results can be expected. In fact, the achievements are found to be consistent also in a longer perspective, considering a period of almost 30 years back.

Gender

The relatively low proportion of female students in IPPS and IPMS may be due to structural factors influencing female participation already at earlier stages in the educational systems, and may therefore be difficult to improve by stimulating female participation only at the postgraduate level. Still the increased proportion of female students in the mathematics and physics programmes in 2011 in comparison with earlier years is an interesting and maybe promising development that will be followed up closely in the future. Meanwhile, efforts to stimulate female participation need to continue.
Evaluation

In the the ISP management response\textsuperscript{12} to the evaluation report it was noted that the evaluators generally support the approach and operation of ISP in the broad strategic context of the role of science in development. Nevertheless, a number of areas are pointed out where improvement is needed, which ISP will attend to. In summary:

- The evaluators generally support the ISP approach and operation, and give seven specific reasons why capacity for science is needed and relevant to the development efforts of developing countries.
- The evaluators find that ISP objectives align well with applicable policies and strategies. In addition, it is pointed out that the World Bank finds that constraints and bottlenecks at the tertiary level are now constraining growth in much of Sub-Saharan Africa, thereby further supporting ISP's approach.
- The evaluators find that ISP efficiently delivers capacity building activities in recipient universities.
- The evaluators find a case for using more objective selection criteria, and even competitive tendering, for more mature and capable research groups in the partner universities.
- The evaluators find that the outputs (published papers) reveal high to satisfactory levels of research work with a level of citations that is above world benchmarks.
- The evaluators find the costs of managing the programme to be within acceptable levels of overhead expenditure profiles of other programmes, although it is noted that ISP would need to invest more in monitoring and evaluation if it is to meet Sida's requirements for “results based management”.
- The evaluators find that ISP is heavily dependent upon Sida funding.
- In several of their conclusions and recommendations the evaluators find that ISP has not kept up with contemporary approaches to development cooperation, particularly with respect to systematically demonstrating relevance, efficiency, effectiveness, impact and sustainability of Sida funding.
- The evaluators find that there are benefits/synergies to be gained by ISP Core Programme activities being undertaken in countries in which Sida also has an agreement covering research and higher education.
- The evaluators find that ISP has the potential to expand into other related fields of science, and recommend a discussion to be taken up with Sida about this.

ISP 50\textsuperscript{th} Anniversary

The ISP 50\textsuperscript{th} Anniversary seminar attracted about 200 participants from Sweden and abroad, representing universities, authorities, embassies, and other organisations. The work of ISP was highlighted from several perspectives, and the importance of the basic sciences as a driving force for development was widely recognized. The Swedish government took the opportunity of the participation in the seminar of the Vice President of the United Republic of Tanzania, H.E. Dr Mohamed Gharib Bilal, and arranged for a seminar at the Ministry of Foreign Affairs under the heading “Dawn in the Serengeti - Sweden’s partnership with a Young African Lion Economy”.\textsuperscript{13} In his speech at the seminar with Swedish Minister for International Development Cooperation, Ms. Gunilla Carlsson, Dr. Bilal further stressed the importance of basic sciences for development, giving prominent examples from the earlier ISP engagement with UDSM, Tanzania.

\textsuperscript{12}http://www.isp.uu.se/ISPEvaluation2011ManagementResponse.pdf

\textsuperscript{13}http://www.sweden.gov.se/sb/d/15079/a/176414
New collaboration

In 2011, ISP responded to several requests to initiate new collaboration (Section 5.1.4), and the activities have been expanded within the frame of the agreements settled. These engagements follow recommendations by the ISP Board in response to the Sida assessment of the ISP proposal to Sida submitted in February 2008, with the resulting agreement from 1 July 2008, presently being under extension. They are also in line with the concern expressed in the 2011 evaluation report, that ISP is financially vulnerable because of almost total dependance on Sida for the operation of the “direct support” or core program. Most of the new agreements, however, concern activities outside the core program, although there may be synergies. The only agreement so far reinforcing the core program is the one with Stockholm University, which provides welcome opportunity for new initiatives. Efforts to seek other financial contributors to the core program will, however, continue.

5.4.2 Why did not happen: ISP Program Level

Proposal to Sida

At the beginning of 2011, the deadline for an ISP proposal for continued financial support was set at 30 April. However, because of a delay in the start of the evaluation of ISP, it was decided in the Sida-ISP meeting 14 February to postpone the submission date to 2 October, to allow for taking into account the findings of the evaluation and to assess the proposal in time for a decision in the Sida Research Council in December. Different circumstances prevented Sida from accepting the proposal in October, and it was again postponed, until 2012. ISP was informed that an invitation to apply would be prepared, based on the recommendations of the evaluation.

Support to Research Groups in Swedish Non-Focus Countries

Laos

The support to Research Groups in Laos using Sida funding was concluded by the end of 2011, with the exception of continued support planned to a physics PhD student at a sandwich-training program with Prince of Songkla University, Thailand. Support to the group is planned to continue to allow for the student to graduate in 2013.

Zimbabwe

As for the Research Groups in Zimbabwe (chemistry), continued support is planned (subject to Reference Group recommendations) to keep and further develop scientific capacity in biochemistry with medical and environmental applications built since 1990. The development in general, and some particularly prominent research results, were presented by Dr. Collen Masimirembwa (IPICS AiBST) at the ISP 50th Anniversary.

5.4.3 Why did not happen: Supported Activities Level

Invitations for Research Group Support with no Response

The Dept. Food Science and Technology at JKUAT has played an essential role as a training facility within the FOSNNA network formerly supported by IPICS. The department has well
developed staff and facilities, and may already have adequate funding from other sources, making the need for ISP support less pressing. Instead, future collaboration with this department may involve again employing it as a resource facility to less developed laboratories in this important field, rather than as a direct recipient of ISP research group support.

Because the scientist in pharmacological chemistry at Addis Ababa University provided a plausible reason for postponing submission of an application to ISP to 2012, he can expect a new invitation for support starting in 2013, if conditions so allow.

Incomplete activity reporting

The research group IPPS SEN:01, which was granted use of funds in balance in 2011, but did not submit the requested activity report, constitutes an exception. In other cases when use of balances have been granted activity reporting has been duly received. Nevertheless, it indicates a weakness in ISP follow-up procedures that needs to be addressed.

5.5 Publications that have resulted from the research activities supported by the program

Scientific and popular publications reported by supported activities for 2011 are given under the three program fields, Chemistry, Mathematics and Physics. The bibliographic information is obtained directly from the reporting of the supported activities, with only minor editing, and the form of presentation may therefore vary. The ISP-supported activity reporting the publication is given after each entry.

The publications are sorted by scientific journal, and where available the ISI Impact Factor 2010 is given (with the 5-year Impact Factor within brackets). 11

5.5.1 Chemistry

Scientific publications

*Advance Journal of Food Science and Technology, ISSN 20424868*


*Advances in Environmental Biology, ISSN 19950756*

African Journal of Pharmacy and Pharmacology Research


African Journal of Plant Science and Biotechnology ISSN: 17523931


Analytica Chimica Acta 4.311 (3.657)


Analytical and Bioanalytical Electrochemistry


Analytical Letters 0.920 (1.091)


Analyst 3.913 (3.843)

S. Chigome, G. Darko and N. Torto. Electrospun nanofibers as sorbent material for solid phase extraction. Analyst 136, 2879-2889 (IPICS SEANAC)

Archives of Virology 2.209 (2.159)


Asian Journal of Biotechnology ISSN 19960700


Asian Journal of Industrial Engineering ISSN 19963386


Asian Journal of Pharmaceutical and Health Sciences ISSN 22312331


Bioorganic & Medicinal Chemistry 2.978 (3.108)


BMC Complementary and Alternative Medicine 2.195(no entry)


Bulletin of Entomological Research 1.909 (1.934)


Bulletin of Cambodian Chemical Society

Bun S.C. Determination of pesticide residues in Mung bean in Kandal, Kampong Cham and Siem Reap Province, Bull. Cambodian Chem. Soc., 2(1). (IPICS CAB:01)


Bulletin of the Chemical Society of Ethiopia ISSN 10113294 0.298(0.105)


Hillete Hailu, Berhane Atsbeha, Shimelis Admassie, Wendimagegn Mammo, V.J.T. Raju and Yonas Chebude. Variable denticity of multidentate terthiophene derivative towards Ni(ii) and Zn(ii) - structural studies, Bull. Chem. Soc. Ethiop. 25(2)221-231. (IPICS ETH:01)
Chemical Communications 5.787 (5.582)

Chemosphere 3.155 (3.559)
J. Wasswa; B.T. Kiremire; P. Nkedi-Kizza; J. Mbabazi; P. Ssebugere, "Organochlorine pesticide residues in sediments from the Uganda side of Lake Victoria". Chemosphere, 82(1)130-136. (IPICS ANCAP)

Chromatographia 1.075 (1.216)
D. Adeyemi, J. Mokgadi, J. Darkwa, C. Anyakora, G. Ukpo, C. Turner & N. Torto. Electrospun Nanofibers Sorbents for pre-concentration of 1,1-dichloro-2,2 bis-(4-chlorophenyl)ethylene with subsequent desorption by pressurized hot water extraction, Chromatographia 73,1015-1020. (IPICS SEANAC)

Clinical Microbiology and Infection 4.784 (4.034)

Current Research Journal of Biological Sciences ISSN 2041 0778


Electroanalysis 2.721 (2.923)
M. Pontié, G. Thouand, F. De Nardi, Issa Tapsoba, S. Lherbette. Anti-passivating electrochemical process of glassy carbon electrode (GCE) dedicated to nitrophenol compounds oxidation. Electroanalysis, 23(7)1579-1584. (IPICS BUF:01)

M. Pontié, L. Sikpo, G. Thouand, R. Lahan, Issa. Tapsoba, R. Mallet, T. Feng, Direct electroanalysis of p-nitrophenol (PNP) in estuarine and surface waters by a high sensitive type C/p-NiTSPc coating carbon fiber microelectrode (CFME). Electroanalysis 23(2)433-441. (IPICS BUF:01)

Environmental Monitoring and Assessment ISSN: 01676369 1.436(1.539)
JAO Oyekunle, AO Ogunfowokan, N. Torto, MS Akanni. Determination of organochlorine pesticides in the agricultural soil of Oke-Osun settlement, Osgbo Nigeria. Env Monit Assess, 177,51-61 (IPICS SEANAC)

33

European Journal of Clinical Pharmacology  3.032 (2.600)

European Journal of Entomology  0.945 (1.069)

European Journal of Mass Spectrometry  1.103 (1.022)

Evidence-Based Complementary and Alternative Medicine ISSN: 17414288 2.964 (3.091)
W. Chigwaru W. Chigwaru, S.O. Yeboah, J.C. Jackson, P. T. Kapewangolo, M. Kandawa-Schulz, and A. Cencic. Tylosema esculentum (Marama) tuber and bean extracts are strong antiviral agents against Rotavirus infection. Evid-Based Compl Alt. (IPICS NABSA)

Future Medicinal Chemistry ISSN: 17568919 1.424 (1.424)

International Journal of Biological and Chemical Sciences
A. SAVADOGO* and A.S. TRAORE. La flore microbienne et les propriétés fonctionnelles des yaourts et laits fermentés. Int. J. Biol. Chem. Sci. 5(5)2057-2075. (IPICS RABIOTECH)

International Journal of Chemical Research ISSN:09753699

International Journal of Earth Sciences  1.980 (2.413)


International Journal of Phytomedicine ISSN: 09750185


International Society for Infectious Diseases ISSN: 12019712


Journal de la Société Ouest-Africaine de Chimie


Journal of Applied Sciences ISSN: 18125654


Journal of Applied Sciences Research ISSN: 1819157X


Journal of Food Protection


Journal of Environmental Monitoring 1.810 (2.083)

Linderholm L, Jakobsson K, Lundh T, Zamir R, Shoeb M, Nahar N and Bergman A. Environment exposure to POPs and heavy metals in urban children from Dhaka, Bangladesh. J Environ Monitor 13,2728-34. (IPICS BAN;04)

Journal of International Environmental Application & Science ISSN: 13070428


Journal of Medical Genetics and Genomics ISSN: 21412278


Journal of Medical Virology 2.895 (2.726)


Journal of Polymer Science Part A: Polymer Chemistry 3.849(3.317)


Journal of the American Oil Chemists Society (JAOCS) 1.587(1.939)


Middle-East Journal of Scientific Research ISSN: 19909233

Joseph B. Sawadogo, Dayéri Dianou and Alfred. S. Traoré. Effects of Temperature and Termite’ Substrate on Methane and Carbon Dioxide Emissions from Macrotermes bellicosus and Microcerotermes dubius Cultures. MEJSR 9(1) 75-83. (IPICS RABIOTECH)

Natural Products Communications 0.894(0.884y)


Pakistan Journal of Nutrition ISSN: 16805194


Revue de Microbiologie Industrielle Sanitaire et Environnementale ISSN : 20280351


South African Journal of Science ISSN: 19967489


Synthetic Metals ISSN: 03796779

F. Tinti, S. E. Debebe, W. Mammo, T. Yohannes, N. Camaioni. Temperature and electric field dependent hole mobility in a polyfluorene copolymer. Synthetic Metals 161, 794–798. (IPICS ETH:01)

Talanta

S. Mehretie, S. Admassie, T. Hundie, M. Tessema and Th. Solomon. Simultaneous determination of N-acetyl-p-aminophenol and p-aminophenol with poly(3,4-ethylenedioxythiophene)-modified glassy carbon electrode. Talanta, 85, 1376. (IPICS ETH:01)

WaterSA ISSN: 03784738

Modise Rammika, Godfred Darko and Nelson Torto. Incorporation of Ni(II)-dimethylglyoxime ion imprinted polymer into electrospun polysulfone nanofibre for the determination of Ni(II) ions from aqueous samples. WaterSA 37, 539-546. (IPICS SEANAC)

Books, Book Chapters, Popular Publications, Technical Reports, etc.

Rokeya Begum, Mosihuzzaman M, Azad Khan AK, Nilufar Nahar and Ali Liaquat, “Emerging Challenge of Type 2 Diabetes: Prospects of Medicinal Plants” Book title: “Recent Advances in the Pathogenesis, Prevention and Management of Type 2 Diabetes and its Complications” Edited by Mark Zimering, 2011, Chapter 20 pgs 375-390 (IPICS ANRAP)

- Alfred S. Traore, A regional network devoted to development in Africa: The West African Biotechnologies Network, pp. 242-250. (IPICS RABIOTECH)
- Alfred S. Traore, Difficulties in the regional cooperation in Africa: the case of university cooperation and research, pp. 127-137. (IPICS RABIOTECH)
- Altaf Hussain, Network of Instrument Technical Personnel and User Scientists of Bangladesh (NITUB), pp. 322-335. (IPICS NITUB)
- Berhanu Abegaz, Networking to build regional capacity in Africa: The efforts of NABSA, pp. 313-320. (IPICS NABSA)
- Ermias Dagne, Linking laboratories in five neighbouring African countries: ALNAP, pp. 291-298. (IPICS ALNAP)
- Francis M. Mathooko, Food Science and Nutrition Network for Africa: Achievements, challenges, and a way forward, pp. 379-388. (IPICS FOSNNA)  
  
- Jacob O. Midiwo, Natural products research network for Eastern and Central Africa (NAPRECA), pp. 288-290. (IPICS NAPRECA)
- Jenny Ruales and Luis Arturo Bello-Perez, Food research within LANFOOD in Latin America, pp. 371-377. (IPICS LANFOOD)
- John Saka and Jane Morris, Networking in basic science enhances human capital development and better application of science in development: Experiences from IPICS-funded and SABINA projects in Southern Africa, pp. 389-392. (IPICS MAW:01)
- Mohammed Mosihuzzaman, Asian Network of Research on Anti-Diabetic Plants, pp. 299-305. (IPICS ANRAP)
- Mohammed Mosihuzzaman, Importance of collaboration and networking in capacity building in basic sciences in the developing countries, pp. 79-86. (IPICS ANRAP, IPICS NITUB)
- Nelson Torto, Driving analytical chemistry initiatives in Africa through SEANAC, pp. 337-345. (IPICS SEANAC)
- Vijaya Kumar, Challenges and Constraints in South-South collaboration: The experience of AFASSA, pp. 307-311. (IPICS AFASSA)
- Yogeshkumar S. Naik, Proposal for a new network on chemicals management in sub-Saharan Africa, pp. 189-194. (IPICS SARBIO, IPICS ZIM:02)

\[14\] Supported through IPICS in the past.
5.5.2 Mathematics

Scientific publications

African Diaspora Journal of Mathematics

S. Ouaro, A. Tchousso; Well-posedness result for a nonlinear elliptic problem involving variable exponent and Robin type boundary condition. 11(2)36-64. (IPMS BURK:01)

Afrika Matematika

C.Seck, G. Bayili, A. Sène, M. T.Niane. Contrôlabilité exacte de l’équation des ondes dans des espaces de Sobolev non réguliers pour un ouvert polygonal. 21(1). (IPMS BURK:01)


Applied Mathematical Sciences

B. Nanyonga, J.Y.T. Mugisha and L.S. Luboobi. The role of HIV positive immigrants and dual protection in a co-infection of malaria and HIV/AIDS. 5(59)2919-2942 (IPMS EAUMP)

arXiv


Asian-European Journal of Mathematics

Mengistu Goa Sangago, Convergence of iterative schemes for Nonexpansive Mappings, 4 (4)671-682. (IPMS ETH:01)

Bulletin of Mathematical Biology 1.859 (2.051)

Guiro, A. Iggidr, D. Ngom; On the Stock Estimation for a Harvested Fish Population. DOI 10.1007/s11538-011-9667-z (IPMS BURK:01)

Canadian Journal of pure and applied Sciences

Wali A.N. On anti-invariant maximal spcelike submanifolds of an indefinite complex space form; 5(1)1429-1432 (IPMS EAUMP)

Communications in Contemporary Mathematics 1.154 (1.006)

Adimurthi, N. SEAM and G.VALLET, On the equation of Barenblatt- Sobolev, 13(5)843 – 862. (IPMS CAB:01)
Ngom T., Sy M. "Derivation and stability study of a rigid lid bilayer model." 16(1) 361-383. (IPMS BURK:01)

**Eurasian Mathematical Journal**

T. G.Ayele, S.E. Mikhailov, Analysis of two-operator boundary-domain integral equations for a variable-coefficient BVP, 2(3)20-41. (IPMS ETH:01)

**Far East Journal of Applied Mathematics**


**Far East Journal of Mathematical Sciences**

Kipchirchir, I.C. Modelling Dispersion Using Finite Mixture of Poisson, 56(2)161-178. (IPMS EAUMP)

**Far East Journal of Theoretical Statistics**

Kipchirchir, I.C. An Approximation of Fisher's Information for the Negative Binomial Parameter k, 34(2)129-138. (IPMS EAUMP)

**ICASTOR Journal of Mathematical Sciences.**

Kipchirchir, I.C. The Versatility of the Negative Binomial Distribution in Describing Dispersion, 5(1)65-78. (IPMS EAUMP)

Aduda, J.A. and Weke, PGO. A Comparison of the Classical Black-Scholes Model and the GARCH Option Pricing Model for Currency, 5(2). (IPMS EAUMP)


**International Journal of Algebra**

B. V. N. Murthy and K. Venkateswarlu, Semi prime and Annihilators in a Boolean like Semi-rings, 5(28)1363-1370. (IPMS ETH:01)

N. Amarnath and K. Venkateswarlu, A note on Linear Transformations of R-vector Spaces, 5(28)1355-1362. (IPMS ETH:01)

**International Journal of Business and Public Management**

Anyika, E.S., PGO Weke and TO Achia. Garched Investment Decision Making with Real Risk. 1(1)9-21. (IPMS EAUMP)
**International Journal of Contemporary Mathematical Sciences**

K. Venkateswarlu, B. V. N. Murthy and N. Amarnath, Boolean like Semi-rings, 6(13)619 - 635. (IPMS ETH:01)

**International Journal of Ecology and Development**

J. M. Ntaganda, B. Mampassi, Fuzzy logic strategy, indirect and direct approaches to solve a performance optimal control problem for sportsmen, 20(F11) (IPMS EAUMP)

**International Journal of Mathematical Analysis**

Wali Augustus. Some results on totally real maximal spacelike submanifolds of an indefinite complex space form, 5, 207-213. (IPMS EAUMP)

**International Journal of Mathematical Sciences and Application**

B. V. N. Murthy and K. Venkateswarlu, Spectrum of Boolean like Semi-rings, 1(3)1083 - 1088. (IPMS ETH:01)

B. V. N. Murthy and K. Venkateswarlu, Isomorphism Theorems in Boolean like Semi-rings, 1(3)1363 - 1369. (IPMS ETH:01)

**International Journal of Mathematics and Computational Methods in Science & Technology**

Monica Kung’aro, E. S. Massawe, O. D. Makinde, Transmission Dynamics OF HIV/AIDS with Screening and Non-linear Incidence, Dec 2011, 47-61. (IPMS EAUMP)

**International Journal of Physical Sciences**

0.540 (0.675)

B. H. Hamza, E. S. Massawe, O. D. Makinde, Analysis of Transient Heating due to Exothermic Reaction in a Stockpile of Combustible Material, 6(18) 4337-4341. (IPMS EAUMP)

I. Kibona, D. Makinde, W. Mahera and J. Mango, A deterministic model of HIV/AIDS with vertical transmission in the presence of infected immigrants, 6(23) 5383-5398. (IPMS EAUMP)

**Journal of Applied Mathematics and Informatics**

M.G. Sangago, Modified Halpern Iterative Algorithms for Nonexpansive Mappings, 29(5-6)1363-1379. (IPMS ETH:01)

**Journal of Mathematical Analysis and Applications**

1.174 (1.345)

R. Safiel, E. S. Massawe, O. D. Makinde, Modelling the Effect of Screening and Treatment on Transmission of HIV/AIDS Infection in a Population, 4397 – 4405. (IPMS EAUMP)

**Journal of Mathematical and Computational Science**

E. S. Massawe, S.S Salim, O. D. Makinde, Modelling the Pyrolysis and Combustion of Wood, 2(3). (IPMS EAUMP)
Journal of Mathematics and Statistics

Kasozi, J.; Mayambala, F.; Mahera, C.W, Dividend maximization in the Cramer-Lundberg model using homotopy analysis method, 7(1) 61-67 (IPMS EAUMP)

Mathematical Biosciences

Semu Mitiku Kassa and Aziz Ouhinou, Epidemiological models with prevalence dependent endogenous self-protection measure, 229,41-49. (IPMS ETH:01)

Mathematical Journal of Ibaraki University

Habte Gebru. Some results on a conjecture regarding Mori Domain, 43.43-50. (IPMS EAUMP)

Nonlinear analysis: Real World Applications


Ngonn SEAM and Guy VALLET, Existence results for nonlinear pseudo parabolic problems, 12(5)2625-2639. (IPMS CAB:01)

Nonlinearity

Ersoy M., Ngom T., Sy M. Compressible primitive equation: formal derivation and stability of weak solutions, 24, 79-96 (IPMS BURK:01)

p-Adic numbers, Ultrametric Analysis and Applications

V. Nyagahakwa, A. Vitalij, A. Chatyrko, On the Families of Sets Without the Baire Property Generated by the Vitali Sets, 3,100-107. (IPMS EAUMP)

Pakistan Journal of Statistics and Operation Research

V. G. Masanja, P. N. Mwita, R. O. Otieno, C. Muyanja, Prediction of the Likelihood of Households, 7,331-346. (IPMS EAUMP)

Proceedings of the American Mathematical Society

T. Abebaw and R.Bogvad, Decomposition Factors of D-Modules on Hyperplane Configurations in General Position, S 0002-9939, 11127-4 (IPMS ETH:01)

Rwanda Journal, Series C


Scientific Research and Essays

I Shaban, E. S. Massawe, O. D. Makinde, Modelling the Effect of Screening on the spread of HIV Infection in a Population with variable inflow of Infective Immigrants,4397-4405. (IPMS EAUMP)
D. Le Roux, M. Diémé, A.Sène, Time discretization schemes for Poincaré waves in finite-element shallow-water models. 33(5)2217-2246.  
(IPMS BURK:01)

B. V. N. Murthy and K. Venkateswarlu, Primary ideals in Boolean like Semi-rings, 6(28) 1367-1377.  
(IPMS ETH:01)

Books, Book Chapters, Popular Publications, Technical Reports, etc.

(IPMS BURK:01)

(IPMS EAUMP)

The following contributions by representatives of ISP-supported activities were published in the "Proceedings of the International Conference on Regional and Interregional Cooperation to Strengthen Basic Sciences in Developing Countries", Addis Ababa, Ethiopia, 1-4 September 2009, Ed. Christer Kiselman, Acta Universitatis Uppsaliensis, 88, 2011.

- Hamidou Touré, Lessons learned from ten years of network activities, pp. 165-171.  
  (IPMS BURK:01)

  (IPMS BURK:01)

  (IPMS EAUMP)

5.5.3 Physics

Scientific publications

* African Journal of Food Agriculture Nutrition and Development (AJFAND)*

Levi Shadeya-M Akundabweni, R. W. Munene, D; D. M. Maina, S. K. Bartilol, Mineral Micronutrient Density in Local Cereals Sampled from Bungoma, Maseno and Kibwezi Areas, AJFAND 10(11) 4301,  
(IPPS KEN:01/2)

L. S. M. Akundabweni, G. Mulokozi and D.M. Maina, "onomic Variation Characterization in African Leafy Vegetables for Micronutrients Using XRF and HPLC, AJFAND 10(11)4320,  
(IPPS KEN:01/2).

* Applied Optics*  
1.707 (1.772)

(IPPS KEN:03)

Bangladesh Journal of Medical Physics

Aktharuzzaman, T. N. Baig, and K. S. Rabbani, Design of a microcontroller based system to implement 4-electrode Focused Impedance Method (FIM), Bangladesh J. Med. Phys. 4(1)75. (IPPS BAN:04)


K. S. Rabbani, Hypotheses to explain the occurrence of multiple peaks of DFL in nerve conduction measurement, Bangladesh J. Med. Phys. 4(1) 27. (IPPS BAN:04)

K. S. Rabbani and M. Abdul Kadir, Possible applications of Focused Impedance Method (FIM) in biomedical and other areas of study, Bangladesh J. Med. Phys. 4(1)67. (IPPS BAN:04)


M. Jahangir Alam, Syed M. Akram Hossain, Kamila Afroj and Shyam Kishore Shrivastava, Quality assurance of dose distribution of photon beam planning by Anisotropic Analytical Algorithm (AAA), Bangladesh J. Med. Phys. 4(1)43. (IPPS BAN:04)


Bangladesh Journal of Nuclear Medicine


IPPS BAN:02

Biosensors


IPPS CAM:01

Bulletin of Environmental Contamination and Toxicology


IPPS KEN:04


IPPS KEN:04

Electroanalysis


IPPS CAM:01

Environmental Science and Policy


IPPS KEN:01/2

European Physical Journal B


IPPS ETH:01

Geochemistry Geophysics Geosystems


IPPS ETH:02

International Conference on Magnetic and Advanced Materials (ICMAM), 3-7 October 2010, Proceedings 2011


IPPS BAN:02

S. Akhter, D. P. Paul, M. A. Hakim and S. Manjura Hoque. Magnetic and Dielectric behavior of Cadmium substituted Lithium FerriteS.  

IPPS BAN:02
Umasree Dhar, S. Manjura Hoque, M. A. Hakim and D. P. Paul. Striking Enhancement of Magnetic Softness in Short Time Annealing than for Longer Annealing Time of Fe\textsubscript{74Cu}_{0.8}Nb_{2.7}Si_{15.5}B\textsubscript{7}. (IPPS BAN:02)

Saadni Islam, Kazi Hanium Maria, Shamima Choudhury, M. A. Hakim,, D. K. Saha, S. Manjura Hoque. Isothermal Annealing And Magnetic Properties Of Fe\textsubscript{70CrCu}_{1.5}Si_{13.5}B\textsubscript{9} Amorphous Alloys. (IPPS BAN:02)

Kazi Hanium Maria, Shamima Choudhury, M. A. Hakim, D. K. Saha and S. Manjura Hoque, Microstructure-Property Relationship In Zn Substituted Cu Ferrites. (IPPS BAN:02)


M. Mahbubur Rahman, S. S. Sikder, and M. A. Hakim. Study Of Permeability, Resistivity And Microstructure of Ba-Hexaferrites with Additives. (IPPS BAN:02)

S. Noor, S. S. Sikder, M. A. Hakim, Shireen Akhter, R. Mathieu, Saiduzzman. Effect of Zn on the Magnetic ordering and Y-K angles of Co\textsubscript{1-x}Zn\textsubscript{x}Fe\textsubscript{2}O\textsubscript{4} Ferrites. (IPPS BAN:02)

M. Samir Ullah, S. Manjura Hoque and F. A. Khan. Magnetization and Complex permeability of Cu substituted spinal Li ferrite. (IPPS BAN:02)

Rumana Zahir, S. Manjura Hoque, M. A. Hakim and F.-U.-Z. Chowdhury. X-ray, microstructure and magnetic properties of Cd substituted Mg ferrites. (IPPS BAN:02)

*International Nano Letters*

K. H. Maria, S. Islam, S. Choudhury, M. A. Hakim, D. K. Saha and Sk. M. Hoque Isothermal annealing and magnetic properties of Fe\textsubscript{70CrCu}_{1.5}Si_{13.5}B\textsubscript{9} amorphous alloys, Int. Nano Lett. 1(2)97. (IPPS BAN:02)

*International Journal of Basic and Applied Sciences*

M. A. S. Karal, K. Bärner, M. Kamruzzaman, D. K. Saha, and F.A. Khan, Recrystallization phenomena in melt-spun (Fe\textsubscript{100-x}V\textsubscript{x})\textsubscript{75}P\textsubscript{15}C\textsubscript{10} alloys, Int. J. Basic Appl. Sci. 11(1)54. (IPPS BAN02)

*Journal of Applied Physics* 2.79 (2.215)


*Journal of Bangladesh Academy of Sciences*

M. Samir Ullah, S. Manjura Hoque, F. A. Khan, Saroaut Noor, M. A. Hakim and D. K. Saha, Studies on the Electrical Properties of Cu Substituted Li-ferrites, J. Bangladesh Acad. Sci. 35(2)221. (IPPS BAN:02)
M. A. S. Karal, M. Kamruzzaman and F. A. Khan, Transport and Magnetic Properties of (Fe_{100-x}V_{x})_{75}P_{15}C_{10} Amorphous Alloys, J. Bangladesh Acad. Sci. 35(2)161. (IPPS BAN:02)

Journal of Geophysical Research 3.303 (3.621)


Journal of Emerging Trends in Engineering and Applied Sciences

K. H. Maria, S. P. Mondal, S. Choudhury, S. S. Sikder, M. A. Hakim and D. K. Saha, Effect of annealing temperature on the soft magnetic properties of Fe_{75.5}Cu_{1.3}Si_{13.5}B_{9} amorphous alloys, JETEAS, 2(1)102. (IPPS BAN:02)

Journal of Microscopy 1.872(2.011)


Journal of Nanoscience Letters


Journal of Non-Crystalline Solids 1.492 (1.583)

S. Manjura Hoque, A. K. M. Rezaul Haque, Md. Obaidur Rahman, N. H. Nghi, M. A. Hakim, Shireen Akhter, A detailed study of ultra-soft magnetic properties and giant magnetoimpedance of Co_{0.8}Fe_{4.5}Si_{12.5}B_{15}, J Non-Cryst Solids 357, 2109. (IPPS BAN:02)

C. M. Muiva, S.T. Sathiaraj and J.M. Mwabora, Crystallisation kinetics, glass forming ability and thermal stability in glassy Se_{100-x}In_{x} chalcogenide alloys, J Non-Cryst Solids, 357, 3726. (IPPS KEN:02)

Journal of Optoelectronics and Advanced Materials 0.412 (0.481)

Cosmas M. Muiva, Stephen T. Sathiaraj and Julius M. Mwabora, Thermal and compositional defects in chemical spray pyrolysed indium selenide (In_{x}Se_{3}) thin films: Effects on film properties, J Optoelectron Adv M, 13(9)1240. (IPPS KEN:02)

Journal of Sensors and Transducers


Modern Physics Letters B 0.438 (0.407)

S.M. Hoque, U. Dhar, M. A. Hakim, D. K. Saha and H. N. Das, Evolution of nanograins and soft magnetic properties of Fe_{74}Cu_{8.8}Nb_{2.5}Si_{15.5}B_{2} by isothermal annealing, Mod Phys Lett B 25, 1241. (IPPS BAN:02)
Nature Communications

D. Keir, M. Belachew, C. Ebinger, J.-M. Kendall, J. Hammond3, G. Stuart, A. Ayele & J. Rowland, Mapping the evolving strain field during continental breakup from crustal anisotropy in the Afar Depression, Nat Commun, 2, 285. (IPPS ETH:02)

Optics Letters


Philosofical Magazine

S. M. Hoque, M. A. Hakim, U. Dhar, D. K. Saha, P. Nordblad and D. P. Paul, Detailed study of ultra-soft magnetic properties of Fe_{74}Cu_{0.8}Nb_{2.7}Si_{15.5}B_{7}, Philos Mag 91, 2117. (IPPS BAN:02)

Physica B


Review of Scientific Instruments


Tectonics


The Nucleus

M. A. S. Karal, H. M. I. Jaim, M. Kamruzzaman, M. G. M. Hossain, and F. A. Khan, Transport, magnetic and thermal properties of (Fe_{100-x}V_{x})_{75}P_{15}C_{10} amorphous ribbons, The Nucleus, 48(2)83. (IPPS BAN:02)

X-Ray Spectrometry


Books, Book Chapters, Popular Publications, Technical Reports, etc.

Research Signpost, Editor: Klaus Bärner, Trivandrum-695 023, Kerala, India.
(IPPS BAN:02)

The following contributions by representatives of ISP-supported activities were published in the “Proceedings of the International Conference on Regional and Interregional Cooperation to Strengthen Basic Sciences in Developing Countries,” Addis Ababa, Ethiopia, 1-4 September 2009, Ed. Christer Kiselman, Acta Universitatis Upsaliensis, 88, 2011.

- Joseph Buchweishaija, Margaret Samiji, and Tom Otiti, Five years of materials science and solar energy for Eastern and Southern Africa, pp. 282-286. (IPPS MSSEESA)

5.6 Academic theses that have resulted from the research activities supported by the program

The entries are given essentially as reported to ISP. (F = female; M = male).

5.6.1 PhD Theses

Bangladesh

Shafiqul Islam (M) Studies of Structural and the Giant Magneto-Caloric Effect of some Manganites Perovskites. (IPPS, BAN:02, PhD, local)

Saroaut Noor (F) Effect of Additives on the Structural, Magnetic and Transport Properties of Cobalt Ferrites. (IPPS BAN:02, PhD, local)

Botswana

ANGO Patrick (M. Chemical investigation of two medicinal plants of Cameroon: Artocarps communis and Trilepisium madagascariense (Moraceae). Total synthesis of 2’; 4’; 4-trimethoxy-chalcone, Antimicrobials activities of Compounds. (IPICS NABSA, PhD, sandwich)
**Burkina Faso**

Blaise KONE (M) Etudes de problèmes anisotropiques non linéaires. (IPMS BURK:01, PhD, local)

BONKOUNGOU O. Juste Isidore, (M) Epidémiologie et caractérisation moléculaires des rotavirus, des pathovars d’*Escherichia coli* et autres entéropathogènes impliqués dans les gastroentérites aiguës infantiles au Burkina Faso, (IPICS RABIOTECH, PhD, local)

COMPAORE Rakèta (F) Formulayion des farines infantiles à partir des produits locaux (*P. biglobosa, A. digitata, M. oleifera, C. maxima*) et utilisation dans la récupération nutritionnelle des enfants de 6 à 59 mois. (IPICS RABIOTECH, PhD, local)

OUEDRAOGO Seydou (M) Etude d’une série de phtalocyanines mononucléaires et binucléaires par des méthodes électrochimiques. (IPICS BUF:02, PhD, local)

SOMDA K. Marius (M) Contribution a la dépollution de l'environnement par la valorisation de la biomasse végétale au Burkina Faso: cas de la biotransformation des résidus de mangues. (IPICS RABIOTECH, PhD, local)

TRAORE Moro dit Djibril (M) Aspect épidémiologique du virus de la panachure jaune du riz (RYMV) au Mali et au Burkina Faso. (IPICS RABIOTECH, PhD, local)

ZANG EDOU Sonya Estelle (F) Paludisme à *Plasmodium*: Diversité allélique parasitaire, pathogénicité et inhibition in vitro de l’apoptose de la cellule endothéliale humaine. (IPICS RABIOTECH, PhD, local)

ZONGO Cheikna (M) Etude phytochimique et pharmacologique de quelques plantes communément utilisées en Afrique de l’ouest pour lutter contre les infections parasitaires et microbienne. (IPICS RABIOTECH, PhD, local)

**Ethiopia**

GEDEFAW Desta Antenehe (M) Synthesis of conjugated polymers for optoelectronic applications. (IPICS ETH:01, PhD, sandwich)

**Kenya**

Josphat Mulwa (M) Integrated geophysical study of Lake Bogoria geothermal prospect in the central Kenya Rift Valley. (IPPS KEN:05, PhD, local).

MACHUMI Francis (M) Phytochemical investigation of four Kenyan plants from families *Verbenaceae* and *Asteraceae* for their antiplasmodial, antileishmanial and antioxidant activities. (IPICS KEN:02, PhD, sandwich)

Zachariah Kuria (M) Seismotectonics of Active Faults: Magadi Fault System, South Kenya Rift. (IPPS KEN:05, PhD, local)
Senegal
Léon Matar S. Tine (M) Analyse mathématique et numérique de modèles de coagulation-fragmentation. (IPMS BURK:01, PhD, sandwich)
Michel Dième (M) Etudes théorique et numérique de divers écoulements en couche mince. (IPMS BURK:01, PhD, sandwich)

Uganda
Betty Kivumbi Nannyonga (F) Modelling the severity and co-infection with malaria in populations with persistent and re-emerging infections. (IPMS EAUMP, PhD, sandwich)

Zimbabwe
Benjamin Umar Ebeshi (M) Pharmacogenetics of drug metabolizing enzymes in the Nigerian population. (IPICS AiBST, PhD, local)

5.6.2 MSc/MPhil Theses

Bangladesh
Faizus Salehin (M) Sonochemical synthesis of NiFe₂O₄ nanoparticles and characterization. (IPPS BAN:02, MSc, local)
Hiron Moy Sarma (M) Studies of antibiotics in fish, poultry and poultry feeds and contaminants in Food Stuff. (IPICS BAN:04, MPh, Sandwich)
Jeeshan Ahmed (M), Development of clean up method for diazinon from soil matrix. (IPICS BAN:04 MSc, local)
Mahabub Alam Bhuiyan (M) Comparison of the properties of NiFe₂O₄ from NiO and Fe₂O₃ synthesized by chemical co-precipitation and AR grade powder. (IPPS BAN:02 MSc, local)
Mahmuda Fardous; (F) Analysis of DDTs in different parts of Mola fish sample. (IPICS BAN:04, MSc, local)
Masum Billah (M) Determination of abdominal fat thickness using FIM and correlation with MRI findings. (IPPS BAN:04, MSc, local).
Mithun Kumar Das (M) Effect of Ni Substitution on Magnetic properties Li-Mg ferrites. (IPPS BAN:02, MSc, local)
Md. Mafizul Islam (M) Determination of purity of some turmeric powder available in local market of Bangladesh. (IPICS BAN:04, MSc, local)
Md. Shahidul Islam Khan (M) Analysis of heavy metals (Pb, Ni and As) in soil and rice seedlings. (IPICS BAN:04, MSc, local)
Md. Shahin Sheak (M) Investigation of the effect of Cu substitution on magnetic and electrical properties of Mg-Zn ferrites. (IPPS BAN:02, MSc, local)

Mohammad Suman Haque (M) A study of the quality control parameters in some orange juice-drink of Bangladesh. (IPICS BAN:04, MSc, local)

Prashanta Kumar Halder (M) Effect of Ca substitution on magnetic and electrical properties of Mn-Zn ferrites. (IPPS BAN:02, MSc, local)

Rayhan Hossain Rubel (M) Development of clean up method for chlorpyrifos from soil Matrix. (IPICS BAN:04, MSc, local)

Romena Akhter (F) Determination of impedance distribution in a non-homogeneous medium using FIM. (IPPS BAN:04, MSc, local)

Saifur Rahman Azad (M) Analysis of heavy metals in soil and rice seedling (Cd, Cr and As). (IPICS BAN:04, MSc, local)

Sakia Shabnam Kader (F) Synthesis and characterization of CuFe$_2$O$_4$ nanoparticle by chemical co-precipitation. (IPPS BAN:02, MSc, local)

Samira Islam Liba (M) Detailed study of hysteresis behavior of Fe$_{74}$Cu$_{0.8}$Nb$_{2.7}$Si$_{15.5}$B$_{7}$ annealed at different temperatures and time. (IPPS BAN:02, MSc, local)

Samirullah (M) Structural and magnetic properties of Li-Cu mixed spinel ferrites. (IPPS, BAN:02, MPhil, local)

Sayem Karal (M) Transport, magnetic and thermal properties of (Fe$_{100-x}$V$_{x}$)$_{75}$P$_{15}$C$_{10}$ amorphous ribbons. (IPPS BAN:02, MPhil, local)

Sipra Rani Sutra Dhar (F) Study of dissipation pattern of chlorpyrifos in water sample collected from experimental rice field of BRRI. (IPICS BAN:04, MSc, local)

Susmita Ghosh (F) Effect of Bi$_2$O$_3$ Addition on Electrical and Magnetic Properties and Sintering Temperature of Ni-Cu-Zn Ferrite. (IPPS BAN:02, MSc, local)

Zerin Sultana Munia (F) Studies on the bioaccumulation of organohalogen compounds (DDTs) in Kachki (Corica soborna) Fish. (IPICS BAN:04, MSc, local)

Burkina Faso

BAGUE Ali (M) Analyse comparative de la récupération nutritionnelle des enfants de – a 59 mois : utilisation des farines enrichies aux tourteaux d’arachide et au poisson séché au CREN Morija Schiphra. (IPICS RABIOTECH, MSc, local)

BOUA P. Romual (M) Etude des propriétés anti-oxydantes de 10 variétés de sorgho (Sorghum biclor (L.) Moench) Ouest Africain, en vu de leur utilisation comme aliments fonctionnels. (IPICS RABIOTECH, MSc, local)

COMPAORE Hamidou (M) Caractérisation des moisissures productrices d’antibiotiques et propriétés biochimiques des antibiotiques produits. (IPICS RABIOTECH, MSc, local)
DICOK Alpha Mahamoudou (M) Effet de l’urine produit Ecosan sur la production Des cultures maraîchères dans les conditions agro climatiques de Bamako ; cas de la laitue Blonde de PARIS (Lactuca sativa).

GARBA Abdoulaye (M) Caractérisation des agents pathogènes de la pomme de terre en conservation : cas des tubercules produits au Niger.

GOMEZ Selma Michèle Linda (F) Homéostasie du fer chez les enfants atteints de la drépanocytose.

HAMADOU Hama (M) Essai de production de plants de karité par voie végétative: bouturage et marcottage.

HARO Hadou (M). Effet d’inoculum de champignon Mycorhizien arbusculaire indigène sur la productivité du Niébé (Vigna unguiculata walp (L.)).

HASSANE YOUNOUSSOU Hamadou (M) Étude des possibilités d’amélioration in vitro de Combretum nigricans Lepr. Ex Gill et Perr.; une espèce forestière menacée de disparition dans la région de Niamey.

ILBOUDO Maimouna (F) Prévalence de la Mutation PFCRT 76T chez les enfants de 0 a 5 ans infectés par Plasmodium falciparum et vivant dans l’aire du district sanitaire de Banfora.

KABORE Aminata (F) Étude u pouvoir flocaulant et des qualités épuratoires des graines de Moringa oleifera dans le traitement des eaux brutes de consommation en Afrique subsaharienne : cas des eaux du Burkina Faso.

KABRE Boukary (M). Diarrhées aigues chez les enfants âgés de moins de 5 ans au Centre Hospitalier Universitaire Pédiatrique Charles de Gaulle: Étiologies infectieuses et phénotypes de résistance.

KONATE Djélika (F) Étude de la séroprévalence du VIH au Burkina Faso.

LANKOANDE Roger André Moïse (M) Contribution a la définition d’une date imite de consommation (DLC) des farines infantiles à cuire produites par les PME au Burkina Faso.


MAHAMAT AbdelRahim Abakabir (M) Evaluation de la qualité microbiologique des poissons braisés et de leur assaisonnements vendus dans les rues de la ville de Ouagadougou.

MAHAMAT Oumar Ochar (M) Isolement et caractérisation des bactéries productrices des biofilms issues des produits alimentaires.

NAROUA Chaibou (M) Étude de la valorisation de la Jacinthe d’eau pour la production du composte enrichi au phosphore naturel utilisé comme amendement organique pour la germination des semences d’oignon.

Ouédraogo Jean Claude W (M) Recherche sur les perchlorates de styrylpyrylium: Préparations, propriétés spectrales et électrochimiques de perchlorates de 4-styrylpyrylium et de 6-styrylpyrylium.
OUEDRAOGO Nafissatou (M. Epidémiologie des diarrhées à Rotavirus chez les enfants de moins de cinq (5) ans au Burkina Faso: Caractéristiques climatiques et sociodémographiques dans cinq (5) regions. (IPICS RABIOTECH, MSc, local)

OUERMI Souleymane (M) Mensuration du tractus génital et maturation folliculaire chez des vaches zébus peuls au Burkina Faso. (IPICS, RABIOTECH, MSc, local)

SAVADOGO Boubacar (M) Etat nutritionnel de trois groupes socioéconomiques différents de la ville de Ouagadougou. (IPICS RABIOTECH, MSc, local)

SEYNI SEYBOU Abdoul-Aziz (M) Etude sur la production des variétés des variétés de Sorgho du Niger, Sénégal Mali et Tchad sans fertilisant phosphaté en régime pluvial sur le site experimental de l'INRAN à Konni/Niger. (IPICS RABIOTECH, MSc, local)

SOMBIE Sali (M) Impact de combinaison sulfadoxine pyrimethamine-amodiaquine sur la prévalence de la mutation C59R du gène DHFR chez les enfants de moins de 5 ans soumis au traitement préventif intermittent vivant dans le district sanitaire de Boussé. (IPICS RABIOTECH, MSc, local)

SOME Ines (F) Contribution a la recherche de nouveaux médicament antipaludiques : Evaluation in vitro de l’activité antiplasmodiale et de cytotoxicité des extraits bruts de quelques plantes de la médecine traditionnelle de la province de la Comô. (IPICS RABIOTECH, MSc, local)

TRAORE Hyacinthe (M) Etude de la variabilité régionale des teneurs en vitamines B1, B2 et des éléments minéraux dans les feuilles de Baobab (Adansoni digitata L.). (IPICS RABIOTECH, MSc, local)

TRAORE Kuan Abdoulaye (M) Evaluation de la séroprévalence des virus des Hépatites A (VHA) et E (VHE) au Burkina Faso. (IPICS RABIOTECH, MSc, local)

YAMEOGO N. Désiré (M) Impact de l’orpaillage sur les eaux et les plantes au Burkina Faso : cas de 10 sites. (IPICS R RABIOTECH, MSc, local)

YARO Bilibié Fousséni (M) Portage des bactéries entéropathogènes par des insectes domestiques suceurs d’aliments : Cas de la mouche verte, de la mouche domestique et de la blatte germanique. (IPICS RABIOTECH, MSc, local)

Côte d'Ivoire

Agnero Akpa Marcel (M) Characterization of LED multi-spectral microscope imaging system: Application to micro-beads of organic polymers (polystyrene). (IPPS AFSIN, MSc, local)

Ethiopia

Asmamaw Asrat (M) Dynamics of Motor Proteins – A Monte Carlo Simulation. (IPPS ETH:01, MSc, local)

Aldo Kitalika (M) Levels of Endocrine Disrupting and Other Pesticides in Aquatic Environment and Foodstuff in Dar es Salaam City, Tanzania. (IPICS ANCAP, MSc, local)

Dagne Abebe (M) Gap Formation and Scale Invariance Rainforests. (IPPS ETH:01, MSc, local)
Destaw Bayabil (M) Three Dimensional Diffusion in Presence of Obstacles. (IPPS ETH:01, MSc, local)

Fekadu Wubatu (M) Syntheses of some low band gap p-phenylene copolymers (IPICS ETH:01, MSc, local)

Mequanint Alemye (M) Efficiency, Power and Period at Optimum Operation of a Nano-sized photo electric device. (IPPS ETH:01, MSc, local)

Shewaye Lakew (M) Antifungal substances from essential oils. (IPICS ALNAP, MSc, local)

Sisay Alemayehu (M) Seismicity of Afar and the main Ethiopian rift from 2000 to 2002. (IPPS ETH:02, MSc, local)

Tadele Hunde (M) Simultaneous determination of paracetamol and para-aminophenol using PEDOT-modified glassy carbon electrode. (IPICS ETH:01, MSc, local)

Tadesse G/Giyorgis (M) Stripping square wave voltammetry for the determination of uric acid in human urine using Fe^{3+} doped zeolite graphite powder composite modified glassy carbon electrode (IPICS ETH:01, MSc, local)

Warga Chegeno (M) Diffusion constants for Brownian motion. (IPPS ETH:01, MSc, local)

Wassie Mersha (M) Fluorescence chemical sensor for ferric cation using light emitting monomers and conjugated polymer. (IPICS ETH:01, MSc, local)

Yoseph Abebe (M) Effective Vacancy Diffusion in NiAl Binary Alloy. (IPPS ETH:01, MSc, local)

Kenya

Ben Obiero (M) On Some Applications of Algebra and Geometry in Coding Theory. (IPMS EAUMP, MSc, local)

Bosben Bernard (M) Assessment of Trace Elements in the Foodstuffs Commonly Consumed in Selected Parts of Rift Valley in Kenya. (IPPS KEN:01/2, MSc, local)

Dickson Linani Omuchenyi (M) Multispectral imaging of human blood media applied to malaria diagnostics, (IPPS KEN:04, MSc, local)

Elijah Cheruiyot (M) Monitoring aquatic plants proliferation in Lake Victoria Using Satellite Data, (IPPS KEN:04, MSc, local)

Florence Gitari (F) Assessment of Polychlorinated Biphenyls in Water and Sediments from Ngong and Mathare River. (IPICS KEN:01, MSc, local)

Francis Kimani Mwangi (M) Assessment of trace elements in herbal and conventional beverages consumed in Nairobi city, (IPPS KEN:01/2, MSc, local)

Ian Kaniu Muchai (M) Development of a Chemometric Energy Dispersive X-Ray Fluorescence and Scattering Spectroscopy Method for Rapid Soil Quality Assessment, (IPPS KEN:01/2, MSc, local)
Nicholas Mwenda (M) Assessment of Organochlorine pesticide residues in cow milk, sediments and water from Nairobi West Region. (IPICS KEN:01, MSc, local)

Nustrat Begum (F) Assessment of exposure of VOCs in selected service station attendants in Nairobi” (IPICS KEN:01, MSc, local)

Mbaabu Idah Makena (F) Using Mathematical Models to Assess the Influence of Climate Change on Malaria Risk. (IPMS EAUMP, MSc, local)

Ogutu Julie Amolo (F) Claims Reserving using Over-Dispersed Poisson Model. (IPMS EAUMP, MSc, local)

Osiemo Quinter Pilly (F) Application of ARMA and GARCH Models in Forecasting Pump Oil Prices in Kenya. (IPMS EAUMP, MSc, local)

Wamue Esther Nyatugah (F) Stochastic Modelling of the Default Rates and Recovery Rates of a Bank Loan. (IPMS EAUMP, MSc, local)

Mali

Amadou Coulibaly (M) Application du microscope LED multispectral pour la caractérisation spectroscopique du Plasmodium falciparum. (IPPS MSc, MAL:01, local)

Amadou Diakité (M) Etude de l'Atmosphère à Bamako par la spectroscopie d'absorption optique différentielle (DOAS): Méthode passive, (IPPS MSc, MAL:01, local)

SISSOKO Sankoun (M) Stability of traditional dye used in Bogolan technique during solar light exposition; (IPICS MAL:01, MSc, local)

TOULEMA Amadou (M) Optimisation of gold production process at Morila mining industry Mali. (IPICS MAL:01, MSc, local)

TRAORE Sanata (F) Zinc deficiency in kitchen garden soils in Bamako District. (IPICS MAL:01, MSc, local)

Senegal

Abdoul Aziz Mbengue (M) Maître de la qualité phytosanitaire des mangues au Sénégal. (IPMS BURK :01, MSc, local)

Cheikh Diop (M) Analyse asymptotique des équations Vlasov-Navier-Stokes compressibles. Dérivation d'un modèle de sédimentation. (IPMS BURK :01, MSc, local)

Mamadou Moustapha Mbaye (M) Un modèle mathématique du diabète et ses complications. (IPMS BURK :01, MSc, local)

Modou Mbaye (M) Use of LEDs in optical microscopy. (IPPS, AFSIN, MSc, local)

Oumar BA (M) Un modèle non linéaire de diabète mellitus. (IPMS BURK :01, MSc, local)

Salma Sylla (F) Spectroscopic characterization of Plasmodium falciparum using a light Multispectral Microscopy. (IPPS, AFSIN, MSc, local)
Tanzania

Aziza J. Iddi (M) Modelling the Impact of Infected Immigrants on Vector-Borne Diseases with Direct Transmission. (IPMS EAUMP, MSc, local)

Helikumi Mlyashimbi (M) Transmission Dynamics of Infectious Diseases By Immigrants in a Vaccinated and Expected to Graduate Temporary Immune Protected Population. (IPMS EAUMP, MSc, local)

Kira J. William (M) (Masters in Modelling). (IPMS EAUMP, MSc, local)

Uganda

Alex B. Tumwesigye (M) Some applications of the Poincare-Bendixson Theorem in Stability Analysis. (IPMS EAUMP, MSc, local)

Zambia

Given Kalonga (M) Optimization and characterization of organic solar cells based on region- P3HT and C_{60}–PCBM blends, (IPPS ZAM:01, MSc, local)

Justin K. Pondo (M) In Situ real-time Rutherford back-scattering spectroscopy study of Ni/Ge interaction, (IPPS ZAM:01, MSc, local)

Joseph Simfukwe (M),Design and evaluation of a low cost Photovoltaic system using structured aluminum reflectors. (IPPS ZAM:01, MSc, local)

Elias Phiri (M) Solutions of the Landau problem and some uses of the Density Functional Theory (DFT) in Materials Science. (IPPS ZAM:01, MSc, local)
SECTION 6: EXAMPLES AND APPLICATIONS

6.1 Examples of research findings.

The entries are given essentially as reported to ISP.

**Bangladesh**

One hundred and eight soil samples from different sites and distances from the Chittagong Chemical Complex (CCC) and 30 water samples from the reserved water body of CCC were collected for analysis of DDTs. Twelve soil samples were analyzed so far and found to contain significant amounts of DDTs. (IPICS BAN:04)

Ten commercial brands of yellow coloured soft drinks and juices were analyzed for the presence of toxic colouring agent Yellow 6 by UV-visible spectrophotometer. Seven juice samples were found to contain yellow 6 in the range of 0.8-1.7 μg/mL whereas the fresh juice was not. (IPICS BAN:04)

Preliminary success in abdominal fat thickness (AFT) determination using the Focused Impedance Method (FIM). AFT may be a risk indicator of cardiovascular diseases and diabetes. (IPPS BAN:04).

Distribution of F-Latency in Nerve Conduction study: Efficacy of this method in the diagnosis of Cervical and Lumbosacral spondylosis has been established on a firmer ground. (IPPS BAN:04).

**Burkina Faso**

Dr. Adama Hema visited the Institut of Pharmacy, Université Libre de Bruxelles, Belgium, working on improvement of the physico-chemical properties of a natural dye (apigenidin) extracted from *Sorghum caudatum* of Burkina Faso, by increasing the solubility of this dye by enzymatic glycosylation. (IPICS BUF:01)

**Ethiopia**

In 2011 the eruption of the Nnabro stratovolcano located at the Ethio-Eritrea border affected both countries. It killed seven and possibly more people and emitted the highest levels of sulfur dioxide ever observed. The group of Atalay Ayele at the Inst. Geophysics Space Science and Astronomy at AAU recorded this activity and communicated to the concerned especially to the flight industry which was affected by ash plume. (IPPS ETH:02)
Kenya

The Inst. Nuclear Science and Technology, UONBI, has been active in training medical support personnel from Ministry of Health Hospitals that completed a Diploma course in Nuclear Science. The group has been engaged by Ministry of Nairobi Metropolitan Development for assessing air quality in Nairobi Metropolitan area. The group has also managed and operated within the Lighting Africa Project, an initiative by the World Bank to assess quality of electrical lighting in perspective of replacing paraffin lighting in Africa. (IPPS KEN:01/2)

Laos

Analysis of organochlorin pesticide residues in fruits and vegetables was done with a new method developed together with a Japanese internship student from Toyohashi University of Technology, Mr. Kazuyuki Tsuzuki. The target pesticides were DDT and its metabolite (DDD and DDE). (IPICS LAO:02)

Zimbabwe

A dosing algorithm for efavirenz was derived, which takes into account genetic, gender and weight of patients, and experimental validation of the pharmacogenetic test and clinical evaluation of the utility of the test and dosing algorithm was initiated. (IPICS AiBST)

Using *in vitro* and *in vivo* animal models the likely risk of metabolism drug-herb interactions in the use of some herbs from Nigeria, Zimbabwe and South Africa was demonstrated. Further experiments were conducted with a view to develop drug-herb interactions product label information. (IPICS AiBST)

An additional mechanism of amodiaquine metabolism was uncovered, information which was used to design analogues devoid of toxicity. (IPICS AiBST)

6.2 Examples on how research findings have been translated into changed policy or practices

Actual policy changes as a result of ISP support to Research Groups and Scientific Networks are difficult to identify in the yearly follow up. However, there are several opportunities for policy influence reported, as outlined in Section 6.2.1. There are few examples of change of practices (Section 6.2.2) reported. The entries are given essentially as reported to ISP.

6.2.1 Changed policy

Bangladesh

Staff of IPICS BAN:04 participated in workshops on the Academic Innovation Fund (AIF) for higher education and research, arranged by the Ministry of Science and Technology, evaluating AIF grant applications. (IPICS BAN:04)
Burkina Faso

The network BURK:01 has entered a contract with PANA –“Programme d’action nationale d’adaptation à la variabilité et aux changements climatiques” (INAPA - National Adaptation Programme of Action on Climate Change) for modeling climate change and assessment on social and economic vulnerability to climate change. (IPMS BURK:01)

The CRSBAN has been selected to assist people dealing with street foods in big cities in Burkina Faso (Ouagadougou, Bobo-Dioulasso). (IPICS RABIOTECH)

The CRSBAN has been selected as expert in the National Program of Biogas production for rural areas. (IPICS RABIOTECH)

Kenya

Dr. Michael J. Gatari, Dept. Physics, UONBI, had an oral presentation of Inception on Air quality Assessment in Nairobi Metropolitan Area to senior personnel at the Ministry. (IPPS KEN:01/2)

Uganda

The Department of Mathematics at Makerere University carries out its outreach activities via Uganda Mathematical Society. The activities include the annual National Mathematics contest for Primary schools, Secondary schools, NTCs and PTCs and Universities, participation in PAMO, Annual National Teachers Conference, and public lectures. In 2011, students who excelled in the national mathematics contest have been trained for IMO in Argentina and PAMO in an yet not nominated African country. (IPMS EAUMP)

The Department of Mathematics at Makerere University is linked to Africa Gifted Foundation via the National Association for Education of Gifted Children Ltd. In fact, a rollout on gifted children was planned during the second half of 2011, however, the actual event took place in January 2012 at Makerere University. The gifted children were drawn from Botswana, UK, Nigeria, Tanzania, Kenya and Uganda. (IPMS EAUMP)

Zambia

One staff member from the Department of Mathematics at University of Zambia sits on a number of government committees on climate modelling. (IPMS EAUMP)

Zimbabwe

Prof Collen Masimirembwa was invited to discuss the new Science and Technology policy for Zimbabwe with special responsibility to constitute to issues related to Biotechnology and Genomics. (IPICS AiBST)

15 www.napa-pana.org
6.2.2 Changed practices

Bangladesh

Instrumentation and software for a Telemedicine based Rural Healthcare system was developed, involving a stethoscope, a microscope, an X-ray viewbox, colposcope and a 12 lead diagnostic ECG units, all interfaced to a PC for remote monitoring. This is aimed at equipping 800 computer centres at rural health complexes with internet facility of the Government. Already medical doctors have approved the items and negotiations take place with the Health Ministry for an initial trial installation at 8 centres. If this is implemented successfully this may be reproduced throughout the whole country, and eventually to the whole of the Third World, contributing to a big impact.

(IPPS BAN:04)

An MOU is developed with a private entrepreneur for a joint venture on telehealth in extreme rural areas. This will begin with a few rural centres and one expert centre, which will be expanded with experience and time.

(IPPS BAN:04).

6.3 Examples on how the program has strengthened and benefitted researchers and stakeholders in low income countries.

Several members of ISP-supported activities have been promoted, commissioned, or received awards in 2011. The entries are given essentially as reported to ISP.

Bangladesh

Prof. Nilufar Nahar was appointed National Representative of the IUPAC Chemistry and Human Health Division for the term 2012-2013.

(IPICS BAN:04)

Prof. Nilufar Nahar was honored by the Bangladesh Chemical Society for her achievements in chemistry, at a Symposium on Contribution of Women in Chemistry, held in the International Year of Chemistry 2011.

(IPICS BAN:04)

Prof. Nilufar Nahar was appointed as the Provost of Kabi Sufiya Kamal Hall, University of Dhaka.

(IPICS BAN:04)

Mrs Abida Sultana and the Ph. student Mrs Zerin Sultana Munia received the prestigious fellowship “Bangabandhu Fellowship on Science and ICT Project” given by the Ministry of Science and Technology, for carrying out their Ph.D. degrees.

(IPICS BAN:04)

Prof. F. A. Khan has been included in the “Peer Review Committee”(Physical Sciences) of the Ministry of Science and Technology, for allocations of research funds to different research institutions.

(IPPS BAN:02)

Prof. K. S. Rabbani was the Co-Chair of the Jury board of the National Digital Innovation Award 2011.

(IPPS BAN:04)

Prof. K. S. Rabbani was given the Gold Medal Award of the Bangladesh Academy of Science in the senior group in the Physical Sciences division.

(IPPS BAN:04)
Mr. M A Kadir, Lecturer, got a Commonwealth scholarship award for a split site PhD programme in UK. He is currently working for one year in Warwick University under this programme. (IPPS BAN:04)

Botswana
Dr. Harriet Okatch was appointed associate of the COACH Board, Sep 2011-2012 (IPICS SEANAC)

Burkina Faso
Prof. Stanislas Ouaro was appointed as focal point of the Economic Community of West African States (ECOWAS), for Regional Research Policy. (IPMS BURK:01)
Prof. Hamidou TOURE is a member in the Committee of the Ministry of High Education in charge of Licence-Master-Doctorat reform. He has also been elected as a Fellow of African Academy of Science. (IPMS BURK:01)
Prof. Hamidou Toure has been appointed in June 2011 as deputy Vice Chancellor of Ouagadougou University in charge of Academic affairs. (IPMS BURK:01)

Cambodia
Mr. Thom Sopheaktra (Thesis student supported by CAB:01) got the Honda Young Engineer and Scientist’s Award (“YES Award”), presented by the Honda Foundation to promote the concept of ecotechnology in the region, largely due to his research experience while doing his thesis. (IPICS CAB:01)

Kenya
Prof Bernard O. Aduda was appointed Principal of the College of Biological and Physical Sciences, University of Nairobi. (IPPS KEN:02)
Prof Geoffrey Kamau was elected new chair for the next two years by the ANCAP coordinating team. (IPICS ANCAP)
Prof. Jairus Khalagai was External Examiner, Dept. of Mathematics & Computer Science, Kabarak University. (IPMS EAUMP)
Prof. Lydia Njenga was appointed acting Dean, School of Physical Sciences, University of Nairobi. (IPICS KEN:01)
Prof. Lydia Njenga was appointed to the University adjunct committee. (IPICS KEN:01)
Prof. Lydia Njeng became member of Board of Governors for Gatureka Girls High School (IPICS KEN:01)
Dr Michael Gatari was appointed member of the Kenyan Nuclear Science Policy Committee.  
(IPPS KEN:01/2)

Michael Gatari was appointed to the College Committee for University-Industry Linkage, College of Architecture and Engineering, University of Nairobi.  
(IPPS KEN:01/2)

Prof. Moses Manene has been External Examiner, Jomo Kenyatta University of Agriculture & Technology (JKUAT).  
(IPMS EAUMP)

Prof. Patrick G. O. Weke has been External Examiner, Jomo Kenyatta University of Agriculture & Technology (JKUAT).  
(IPMS EAUMP)

Prof. Patrick G. O. Weke has been External Examiner, Dept. of Mathematics, Catholic University of Eastern Africa (CUEA).  
(IPMS EAUMP)

Prof. Patrick G. O. Weke has been External Examiner, Dept. of Mathematics & Computer Science, Moi University.  
(IPMS EAUMP)

Prof Shem Wandiga was appointed Chair of the Bondo University College Council.  
(IPICS KEN:01)

One of the PhD research students received a grant from IFS for the purchase of chemicals and solvents.  
(IPICS KEN:01)

A member of the group was awarded a research grant by DAAD to pursue her PhD research in Germany for 3 years.  
(IPICS KEN:01)

Ethiopia
Dr. Mulugeta Bekele and Lemi Demeyu have been serving in Ethiopian Physical Society as executive committee members.  
(IPPS ETH:01)

Dr. Atalay Ayele has been assigned Global Earthquake Model (GEM) operational manager for sub-Saharan Africa.  
(IPPS ETH:02)

Laos
Ms. Sysavad Louangsysouphan was promoted to Head of the Chemistry Department.  
(IPICS LAO:02)

Ms. Kesiny Phomkeona and Ms. Vanseng Chounlamany were promoted to be the Deputy Heads of Chemistry Department.  
(IPICS LAO:02)

Mauritania
Prof. Isselkou Ould Ahmed was appointed Director of the Cabinet (in French: Directeur de Cabinet) of the President of Mauritania.  
(IPMS BURK:01)
South Africa
Prof. Nelson Torto was appointed member 2012-2013 of the Analytical Division (V) of IUPAC. 
(IPICS SEANAC)
Prof. Nelson Torto became member of the Committee of Education in IUPAC. 
(IPICS SEANAC)

Tanzania
Prof. E. S. Massawe was promoted in July 2011 from Senior Lecture to Associate Professor. 
(IPMS EAUMP)
Dr. Sylvester E. Rugeihyamu was elected in September 2011 to be the Chairman of Mathematical Association of Tanzania. 
(IPMS EAUMP)
Dr. Charles Mahera was promoted in July 2011 from Lecturer to Senior Lecturer. 
(IPMS EAUMP)
Dr. Egbert Mujuni was elected in September 2011 to be the Chief Editor of the Mathematical Association of Tanzania. 
(IPMS EAUMP)
Dr. Grayson Kakiko was appointed in December 2011 to continue being the Contests Organiser of the Mathematical Association of Tanzania. 
(IPMS EAUMP)

Zambia
Dr. M O Munyati was appointed Head of the Department of Chemistry for a period of 2 years beginning February 2011. 
(IPICS ZAM:01)
Dr. M O Munyati was elected interim President of the Chemical Society of Zambia. 
(IPICS ZAM:01)

Zimbabwe
AiBST were selected as a Centre of Excellence (CoE) for Drug Metabolism and Pharmacokinetics and toxicology by the WHO-TDR-UNECA initiative, the African Network for Drugs and Diagnostics Innovation. October, 2011. 
(IPICS AiBST)
AiBST was shortlisted for the submission of a full proposal on the establishment of the African Pharmacogenomics Consortium (APC) for genomic research in African populations and search for biomarkers of adverse drug reactions in the treatment of infectious diseases by Wellcome Trust under the Human Heredity for Health in Africa (H3Africa). The short-listing came with a small grant for the development of the proposal. 
(IPICS AiBST)
AiBST received a donation from Novartis Pharmaceutical Company in recognition of the sterling work in advancing pharmaceutical research in less resourced settings. 
(IPICS AiBST)
Dr. Stanley Mukanganyama was appointed the Chairperson of the Department of Biochemistry at the University of Zimbabwe from 2011 to 2014. 
(IPICS ZIM:01)
Dr. S. Mukanganyama became a member of the Zimbabwe National Commission for UNESCO, Specialized Standing Committee for Natural Sciences. (IPICS ZIM:01)

Dr. Yogeshkumar Naik became a member of the Zimbabwe National Commission for UNESCO, Specialized Standing Committee for Natural Sciences. (IPICS ZIM:02)

6.4 Successes of communication and use of research results

The entries are given essentially as reported to ISP.

6.4.1 Communication of research results at scientific conferences and meetings

Australia

*International Union of Geodesy and Geophysics General Assembly, Melbourne, 28 Jun - 7 Jul*

Atalay Ayele, C. J. Ebinger, Active Extensional Tectonics in the East African Rift System: Challenges and Opportunities. (IPPS ETH:02)

Atalay Ayele, Progresses of Observational Seismology in Sub-Saharan Africa and Problems encountered. (IPPS ETH:02).

*18th International Corrosion Congress, Perth, 20-24 Nov*

M. A. Imam, M. Moniruzzaman, M. A. Mamun, Anodizing of Zinc for Improved Surface Properties. (IPPS BAN:02).

*5th International Conference on Electroceramics (ICE 2011), University of New South Wales, Sydney, 12-16 Dec*

J. Simiyu, Electron Transport and Recombination Studies on TiO₂ Dye Sensitized Solar Cells Employing Electrochemical Potential Techniques: the Effect of Film Thickness. (IPPS KEN:02)

Bangladesh

*Annual Conference, Organized by Bangladesh Physical Society, 10-11 Feb*


*National Conference on Physics for Development, BUET, Dhaka, 10-11 Feb*


A. Khanom, D. K. Saha and S. M. Rahman. Analytical Examination of Motar used in Archaeological sites of Bangladesh. (IPPS BAN:02)


S. Islam, K. H. Maria, S. Choudhury, M. A. Hakim, D. K. Saha & S. M. Hoque. Behavior of temperature dependence of permeability curves at different stages of crystallizations of nanocrystalline $\text{Fe}_{70.5}\text{Cr}_{3}\text{Cu}_{1}\text{Nb}_{3}\text{Si}_{13.5}\text{B}_{9}$. (IPPS BAN:02)


K. S. Rabbani. Focused Impedance Method (FIM) – a local innovation with global potential in medicine and other areas. (IPPS BAN:04)

Regional Conference on Medical Physics, Dhaka University Senate Building Auditorium, Dhaka, Bangladesh, 18 Feb

M. Abdul Kadir and K. S. Rabbani. Development of dual frequency system of Focused Impedance Method (FIM) for medical diagnosis. (IPPS BAN:04)


Jawshan Ara. Analysis and design of a hypothermia bed. (IPPS BAN:04)

Jawshan Ara, K. S. Rabbani. Artificial musculoskeletal design for an EMG controlled prosthetic hand using flexible wire. (IPPS BAN:04)

Alok Kumar Dey, Md. Adnan Kiber-M. Jahangir Alam and S. Reza Husain. Attenuation characteristics of WML block for cervix cancer treatment. (IPPS BAN:04)


Sultana Mahmuda Yeasmin, Abdus Sattar Mollah, Nazma Zaman. Radiation protection management in several X-ray installations. (IPPS BAN:04)


K Siddique-e Rabbani and Rahman Faizur Rafique. Drinking water disinfection using low voltage electrical field, an innovative method targeting the rural population. (IPPS BAN:04)

K Siddique-e Rabbani. Drinking water disinfection at low cost for rural areas using solar thermal process. (IPPS BAN:04)

*FAO training program University of Dhaka, Bangladesh, Jun 23- Jul 05*

Nilufar Nahar, Introduction to gas chromatography, maintenance, mechanism and separation (IPICS BAN:04)

Nilufar Nahar, Introduction to liquid chromatography, maintenance, mechanism and separation (IPICS BAN:04)

Md Iqbal Rouf Mamun, Method development and validation in residue analysis by gas chromatography. (IPICS BAN:04)

Md Iqbal Rouf Mamun, Method development and validation in residue analysis by liquid chromatography (IPICS BAN:04)

Mohammad Shoeb, GC maintenance and trouble shooting. (IPICS BAN:04)

Mohammad Shoeb, HPLC maintenance and trouble shooting. (IPICS BAN:04)

*BCSIR and CARs, Dhaka, Bangladesh, 42nd training program of NITUB, 08-20 October 2011*

Nilufar Nahar, Liquid Chromatography (LC) (IPICS BAN:04)

Md Iqbal Rouf Mamun, Method development and validation in residue analysis by HPLC. (IPICS BAN:04)

Mohammad Shoeb, Maintenance and trouble shooting of HPLC. (IPICS BAN:04)
Sarouat Noor, S. Sikder, M. A. Hakim, Shireen Akhter, H. N. Das, B. Anjuman, M. Thermal Hysteris Behavior of Co$_{1-x}$Zn$_x$Fe$_2$O$_4$ Ferrites. (IPPS BAN:02)


S. Akhter, D. P. Paul, M. A Hakim, S. Akhter, Al-Mamun, A. Parveen, F. Hysteris Loop Measurements in the system of Cu$_{1-x}$Mg$_x$Fe$_2$O$_3$. (IPPS BAN:02)

Iraj Alipoufard, Gazi Nurun Nahar Sultan, K Siddique-e Rabbani. Cancer Cell Ablation using Irreversible Electroporation. (IPPS BAN:04)


M. M. M Alam Chowdhury, A. K. M Akhter Hossain, M. Abdur Rahman, M. A. Mamun, M. Effect of Li Substitution on the Magnetic Properties of Li-Mg-Ni Ferrites. (IPPS BAN:02)


K. M. A. Hussain, J. Podder, M. Synthesis of CuInS$_2$ Thin Films Depositd by Spray pyrolysis. (IPPS BAN:02)


A. Khanom, S. M. Rahman and D. K. Saha, F. Elemental analysis of old mortar used in various archaeological sites of Bangladesh by SEM and EDAX. (IPPS BAN:02)


M. M. M Alam Chowdhury, A. K. M Akhter Hossain, M. Abdur Rahman, M. A. Mamun, M. Effect of Li Substitution on the Magnetic Properties of Li-Mg-Ni Ferrites. (IPPS BAN:02)
K. Siddique-e Rabbani, Ehsan Alam Chowdhury, M Jahangir Alam, Md. Iftekhar Hossain, A A Mamun, Tanvir Noor Baig, M A Salam, Norazieda Yassin, Yew Long Lo. DFL as an indicator of Cervical Spondylotic Neuropathy. (IPPS BAN:04)


A. N. M. Shaparan, M. A Hakim, S. M. Hoque, S. Akhter, M. A. Mamun. Study of the physical, Magnetic and Transport Properties of Mn-Zn ferrites. (IPPS BAN:02)


*34th annual conference of Bangladesh chemical society University of Dhaka, Dhaka, 19-20 Dec*

Abida Sultana, Presence of yellow 6, an artificial color additive in organic juice. (IPICS BAN:04)

Shankar Mandal, Analysis of biopesticides: sex pheromones. (IPICS BAN:04)

**Bolivia**

*III Bolivian Congress of Ecology, Nov 16-18, Sucre,*

Pinto, C.F. (2011) Ecological specialization from the point of view of evolution and chemical ecology. Invited talk. (IPICS LANBIO)

*III Bolivian Congress of Entomology. Nov 23-25, Santa Cruz,*


**Burkina faso**

*JPO, Ouagadougou Feb 7-12.*

Ilboudo Ousmane et al., Analyse des flavonoides par la spectrométrie de masse. (IPICS BUF:01)

Kaboré Boukaré et al., Analyses des résidus de pesticides par voie électrochimique, (IPICS BUF:01)

Svitlana L. Nitiema Yefanova et al., Extraction et caractérisation des huiles végétales de quelques espèces aléagineux aclimatées au Burkina Faso, (IPICS BUF:01)
2nd Annual session of ReMOA-SOACHIM, 31 Oct-3 Nov, Bobo-Dioulasso

Ismaïla Kéïta, Propriétés des géo matériaux produits industriellement pour la construction. (IPICS MAL:01)

Lamine ZERBO, Mohamed SEYNOU, Julien SORO, Karfa TRAORE, Philippe BLANCHART, Moussa GOMINA, Analyse microstructurale de céramiques de mélanges d’argile et de talc. (IPICS BUF:02)

Seydou OUEDRAOGO, Mabinty BAYO-BANGOURA, Karifa BAYO, Boubié GUEL et Paul-Louis FABRE, Etude des interactions intramoléculaires dans des bimetallophthalocyanines de zinc et de cobalt par des méthodes électrochimiques, (IPICS BUF:02)

B. SORGHO, L. ZERBO, M. SEYNOU, S. PARE, B. GUEL, K. TRAORE, R. OUEDRAOGO, M. GOMINA, P. BLANCHART, Utilisation d’une argile locale comme adsorbant : cas de l’argile de Koro (Burkina Faso), (IPICS BUF:02)

Y.L. Bonzi Coulibaly et al., Matériaux organiques naturels, (IPICS BUF:01)

Cameroon

JCA, JIVTPD, Yaoundé, Oct 5-7

Issa Tapsoba et al., Pollutant analysis in environment: Depollution and prevention approach. (IPICS BUF:01)

Canada

27th Meeting of the International Society of Chemical Ecology, Burnaby, Jul 24-28


Chile


Ethiopia

Climate and Health in Africa, 10 years on, Addis Ababa, 4-6 Apr

M. J. Gatari. Climate Change, air quality and urbanization in Africa. (IPPS KEN:01/2)
Crop Science Society of Ethiopia, Congress, April 28

Prof Ermias Dagne, Exploring Traditional Knowledge through Science. (IPICS ALNAP)


4th ANDi Stakeholder Meeting and Donor’s Conference. Addis Ababa, 24-27 Oct

Collen Masimirembwa, Impact of Gender, Weight and CYP2B6 genotype on Efavirenz exposure in patients on HIV/AIDS and TB treatment - implications for individualising therapy. (IPICS AiBST)

18th Annual Conference of the Plant Protection Society of Ethiopia, 29-30 Dec

Ermias Dagne, Phytochemicals from Indigenous Plants for Plant Protection. (IPICS ALNAP)

Germany

14th International Conference on total X-ray Fluorescence and Related Methods, Dortmund, 6-9 Jun

M. J. Gatari K. Shepherd, S. M. Gaita, J. Boman, S. Thorsson, A. Wagner. Mt Kenya Soil Analysis: Application of TXRF and Laser Particle Size Analyzer. (IPPS KEN:01/2)

Hungary

International Symposium on High Performance Liquid Phase Separations and Related Techniques Budapest, 19-23 Jun

Janes Mokgadi, Thermal degradation studies of alkaloids in goldenseal during selective pressurised hot water extraction, (IPICS SEANAC)

India

International Conference on Biomedical Engineering 2011, Manipal, 10-12 Dec

M. Abdul Kadir, K. Siddique-e Rabbani. Development of a Dual Frequency System for Focused Impedance Method (FIM) For detection or characterisation of Pneumonia, Cervical and Breast cancer. (IPPS BAN:04)


K. Siddique-e Rabbani. Distribution of F-Latency (DFL) - a new nerve conduction parameter Recent developments and possibilities. (IPPS BAN:04)

K. Siddique-e Rabbani. Recent Developments In Focused Impedance Method (FIM) For Biomedical Study.  


**Italy**

*Winter College on Optics in Imaging Science, Trieste, 31 Jan-11 Feb*


**Kenya**

*International Year of Chemistry (IYC2011), University of Nairobi, Feb-Mar*

Ruth Odhiambo. Challenges of Awareness of Chemistry. (IPICS KEN:01)

Ruth Odhiambo. Challenges of teaching chemistry in high school. (IPICS KEN:01)

*OPCW Workshop E-SALAMA-ALMAfrica 02-04 Mar, Mombasa*

Nabil Bashir. Managing a toxicology Laboratory. (IPICS ANCAP)

G. Kamau, Elements of ISO 17025 and Lab Management. (IPICS ANCAP)

*1st Kenyatta University International Mathematics Conference, Kenyatta University, 8-10 Jun*


Patrick Weke. Copula Based Risks Classification: A Simulation Study. (IPMS EAUMP)

*14th NAPRECA Symposium and AAMPS Ethnoveterinary Medicine Symposium, Nairobi, 8-12 Aug*


E. Dagne, et al, Application of UV-VIS Spectroscopy to Evaluate Quality of Medicinal and Edible Oils, (IPICS ALNAP)

Jacob O Midiwo, Francis Machumi et al, Natural Products from plant diversity and their potential in management of neglected diseases, (IPICS KEN:02, IPICS NAPRECA)
Rumbidzai Mangoyi, Theresa Chimponda, Elaine Chirisa, Tariro Chitemerere and Stanley Mukanganyama. Multiple anti-infective properties of selected *Combretum* species from Zimbabwe. (IPICS ZIM:01)

1st International Conference in Mathematical Sciences, Strathmore University, 18-20 Aug

Damian Maingi. On the Minimal Resolution Conjecture for the Ideal of general points in a Projective Space. (IPMS EAUMP)


Regional Congress of Actuaries in Africa, Nairobi, 2-4 Nov

Patrick Weke. Challenges of Educating Actuaries in Kenya. (IPMS EAUMP)

Laos


Altaf Hussain, Network of Instrument Technical Personnel and User Scientists of Bangladesh (NITUB) - Its Contribution in Scientific Research and Education. (IPICS NITUB)

Peter Sundin, Environmental Monitoring and Analytical Quality. (IPICS)

Phousy Inthapanya (presented by Vanpaseuth PHOUTHAVONG), The Contamination of Arsenic in Groundwater. (IPICS LAO:03)

Vanseng CHOULAMANY, Toxicity Monitoring of Effluents from a Wastewater Treatment Plant. (IPICS LAO:02)

International Workshop on Higher Education for Sustainable Development and Today International Integration or 15th Anniversary of National University of Laos, Vientiane, 3 Nov

Peter Sundin, Cooperation between ISP and NUOL. (ISP)

Viengthong Xayavong, Application of electrical Resistivity survey for groundwater investigation in Phonehong district, Vientiane province Lao P.D.R. (IPPS LAO:01)

Mauritius

Intl. Workshop: Bioprocessing, Policy and Practice: Conservation and use of Medicinal plants of the Small Island Developing States (SIDS) of the Indian Ocean and Madagascar, Ebene, 20-22 Apr

Berhanu Abegaz, Network for Analytical and Bioassay Services in Africa (NABSA) - Developing better approaches to investigate medicinal plants. (IPICS NABSA)

Jacob O. Midiwo, The Impact of Natural Products Research Network in East and Central Africa (NAPRECA) on Natural Products research in the region. (IPICS NAPRECA)
Mexico

22nd General Congress of the International Commission for Optics ICO22, Puebla, 15-19 Aug


25th International Conference on Nuclear Tracks in Solids, Puebla, Mexico, 4-9 Sep

I. Traoré, V. Togo, A. M. Norredine, A. Ba. Calibration of CR-39 and application to indoor radon at Bamako, Mali. (IPPS MAL:01)

I. Traoré, A. M. Norreddine, A. Ba. Study of proton track diameters in PADC (Neutrak and PN3). (IPPS MAL:01)

Morocco

Casablanca Workshop on Mathematical Biology, Casablanca, 20-24 Jun

Mouhamadou Diaby, M, Global analysis of shistosomiasis model with a resistant snail species, (IPMS BURK:01)

Namibia

Organization of African Geological Surveys (OAGS) Annual Meeting, Windhoek, 26-29, Sep

Atalay Ayele. Active fault mapping in Illindi (Tanzania) and Karong (Malawi) areas in the East African Rift System and its hazard implication: insights from seismic refraction. (IPPS ETH:02, ESARSWG)

Pakistan

International Conference on Nanomaterials and Nano Ethics, Lahore, Pakistan, 1-5 Dec

F. A. Khan. Magnetic Properties of sputtered Cu/Fe and Fe/CoO nanoparticles. (IPPS BAN:02)

Russia

Intl. Society for Analysis, its Applications and Computation (ISAAC) Congress, Moscow, 22-27 Aug

Tsegaye Gedif Ayele, Analysis of two-operator boundary-domain integral equations for a variable-coefficient BVPs. (IPMS ETH:01)
Singapore

*International Conference on Materials for Advanced Technologies (ICMAT 2011), 26 Jun-1 Jul*


Spain


Ahmed Raihan Abir, Imtiaz Ahmed Khan, K. Siddique-e Rabbani. Graphical implementation of a New Pigeon Hole Imaging (PHI) Technique. (IPPS BAN:04)

South Africa

*23rd Colloquium of African Geology (CAG23), Johannesburg, 8-14 January*

Atalay Ayele. Seismicity of the East African Rift System. (IPPS ETH:02)

*Nanomedicine for Infectious Diseases of Poverty, Magaliesberg, North West Province, 27-31 Mar*

Collen Masimirembwa, Perspectives and Possibilities. Drug Metabolism and Pharmacokinetics (DMPK) in drug discovery and development (DDD). (IPICS AiBST)

*4th IUPAP International Conference on Women in Physics, Stellenbosch, 5-8 Apr*

M. Samiji. Gender Affirmative Measures for Addressing Gender Imbalance in Science. (IPPS MSSEESA)

South Korea


*International symposium on “Trends and application of biocontrol and monitoring techniques for sustainable agriculture”, Chonnam, 03-06 Oct*

Mohammad Shoeb, Halogenated organic pollutants in food and human blood samples of Bangladesh (IPICS BAN:04)


Kongkea Phan, Savoeun Heng, Samrach Phan, Laingshun Huoy, Suthipong Sthiannopkao, Kyoung-Woong Kim. Arsenic Contamination in Foodstuffs in the Mekong River Basin of Cambodia. (IPICS CAB:01)
Sweden

*World Renewable Energy Congress, Linköping, 8-13 May*


*Photonics 4 Life, School of Biophotonics, Hven, 14-21 May*

A. Merdasa, M. Brydegaard. Multispectral, microscopy with application to detection of the plasmodium falciparum parasite. (IPPS AFSIN)

*50th Anniversary of the International Science Programme at Uppsala University; Experiences and Way Forward, Uppsala, 26 Sep*

Collen Masimirembwa, Experiences and effects of long-term support to research groups. (IPICS AiBST)

Betty Nannjonga, Experiences from the student perspective. (IPMS EAUMP)

Jenny Ruales, Food science in Ecuador and scientific networking in Latin America. (IPICS LANFOOD)

Tanzania

*Inter-University Conf. on Creative Futures with Research Partnerships, Dar es Salaam, 24-25 May*


*50th Years Anniversary of the University of Dar es Salaam, Dar es Salaam, 21-22 Jun*

Lwitiko Pholds. Influence of growth temperature on the structural, surface morphology, optical properties and electrical properties of ZnO:B films prepared DC sputtering. (IPPS MSSEESA)


S. Ambonisye and K. Brebda K, Application of Solar energy in the household. (IPPS MSSEESA)

Thailand

*ANRAP Mini Symposium 7 Sep, at the 14th Asian Chemical Congres, Bangkok, Thailand, 5-8 Sep*

M. Iqbal Choudhary, Pakistan, Discovery of Potent Antiglycation Agents of Natural Origin. (IPICS ANRAP)

Nanjwade Basavaraj, India, Polyherbal Formulations for Diabetes and ETC. (IPICS ANRAP)
Amin Bin Ismail, Malaysia. Antihyperglycaemic properties of cocoa protein Hydrolysates. (IPICS ANRAP)

Tuhin Kanti Biswas; India. A New Dimension on Pre-Clinical and Clinical Evaluation of Gymnema sylvestre on Diabetes Mellitus” (IPICS ANRAP)

GAS Premakumara, Sri Lanka. Anti-diabetic properties of some Sri Lanka traditional rice (Oryza sativa L) (IPICS ANRAP)

Nilufar Nahar, Bangladesh. Chemical Studies of some Antidiabetic plant Materials. (IPICS ANRAP)

Liaquat Ali, Bangladesh. Methodological Issues in Antidiabetic Plant Materials. (IPICS ANRAP)

Fawzi Mahomoodally, Mauritius. Screening Alternative Antidiabetic Drugs from the Local Pharmacopoeia of Mauritius. (IPICS ANRAP)

Ivan Lawag, Philippines. Survey of the Antidiabetic Plants Found in the Philippines”. (IPICS ANRAP)

Atia-tul Wahab, Pakistan. Structure Biology and Inhibition of Alpha Glucosidase Enzyme-an Approach towards the Management of Diabetes. (IPICS ANRAP)

Begum Rokeya, Bangladesh, Screening of Plant Materials for Antidiabetic Properties. (IPICS ANRAP)

Masfida Akhter Mala, Bangladesh. Effect of Aqueous and Ethanolic Extract of Aegle marmelos on Glucose Absorpir from the Gut of Non Diabetic and Type 1 Model Diabetic Rats”. (IPICS ANRAP)

Manisha Das, India. Phytochemical and Pharmacological studies of Ethanolic Extract from the Leaf of Mangrove plant Phoenix Paludosa Roxb. (IPICS ANRAP)

International Conference on Geology, Geochronology, and Mineral Resources of INDOCHINA (GEOINDO2011), Khon Kean, 1-3 December

Souathone Singsoupho, Sten-Åke Elming, Tripob Bhongsuwan. Rock magnetic, AMS, and Palaeomagnetic Studies of Neogene-Quaternary Basalts from Southern Laos. (IPPS LAO:01)

Turkey

6th Euro Mediterranean Symposium on Laser Induced Breakdown Spectroscopy, Izmir, 11-15 Sep

United Arab Emirates

Third International Conference Drug Discovery and Therapy. Dubai Higher Colleges of Technology. 7-10 Feb
Rumbidzai Mangoyi, Tariro Chitemerere, Elaine Chirisa, Theresa Chimponda and Stanley Mukanganyama. Inhibition Of Drug Efflux As A Mode Of Action Of Natural Plant Products Against Pathogenic Microbes. (IPICS ZIM:01)

3rd International Conference on Nanotechnology, Organized by IESCO, Al Ain, United Arab Emirates University, 28 - 30 Nov
F. A. Khan. Magnetic Properties of sputtered Cu/Fe and Fe/CoO nanoparticles. (IPPS BAN:02)

United Kingdom

European Aerosol Conference, Manchester, 4-9 Sep
J. Boman, M. J. Gatari, S. Thorsson and A. Mooe. Particle size distribution, number concentration, CO and sources of aerosol particles in Nairobi, Kenya. (IPPS KEN:01/2)

M. J. Gatari, S. M. Gaita, K. Shepherd, J. Boman, S. Thorsson, A. Wagner. Long range transported mineral dust to the Equatorial Global Atmosphere Watch (GAW) Station on Mt Kenya. (IPPS KEN:01/2)

USA

43rd IUPAC World Chemistry Congress, Jul 30-7 Aug. San Juan, Puerto Rico
S. Chigome and N. Torto, A review of opportunities for electrospun nanofibers in analytical chemistry, (IPICS SEANAC)

Ndunda E.N., Gitari F.K., Wandiga S.O., Shiundu P.M and Madadi V.O. Persistent organic pollutants residues in sediments and water from Nairobi and Ngong Rivers. (IPICS KEN:01)

IEEE NANO-2011, Oregon, Portland, 15-19 Aug
Sultan Mahmud, Abdul Hakim. An overview of Chromium substituted Iron based nanocrystalline alloys. (IPPS BAN:02)

56th Magnetism and Magnetic Materials (MMM) Conference, Scottsdale, Arizona, 30 Oct–3 Nov
Mohammed Basith, Stephen McVitie and Damien McGrouther. Controlling domain walls by non topographic pinning features in a permalloy nanowire structure. (IPPS BAN:02)
Vietnam

2nd Academic Conference on Natural Science for Master and PhD Students from Cambodia, Laos, Malaysia, Vietnam (CLMV-02), Vinh City, 11-15 Oct


(VPPS CAM:01)

V. Xayavong, S. Keophilavong, T. Sounsualdoo, S. Xayheuangsy, S. Leungtakuon. Application of Electrical Resistivity Survey for Groundwater Investigation in Phon Hong District of Vientiane Province, Laos PDR. (IPPS LAO:01)

Zambia

National Science Week, National Science and Technology Council, Mulungushi International Conference Centre, Lusaka, Nov

M O Munyati, S Hatwaambo and B Mateyo, Preparation, Characterisation and Properties of Synthetic Metals: Thin Films for Electroactive Applications. (IPICS ZAM:01, IPPS ZAM:01)


G.I. Mirumbe. On distribution solutions to ordinary differential equations with polynomial coefficients. (IPMS EAUMP)

Betty Nanyonga. A dynamical systems approach to social and economic development. (IPMS EAUMP)

J. Kasozi, C. Kasumo and C.W. Mahera. Proportional reinsurance on probability of ruin in a surplus process compounded with a constant force of interest. (IPMS EAUMP)

D.W. Ddumba, J. Mango, V.A. Ssembatya, J. Kasozi. 3-Dimensional Hydrodynamic model of Lake Victoria. (IPMS EAUMP)

Zimbabwe

The Biochemistry and Molecular Biology of Zimbabwe (BMBSZ) Symposium On “Rejuvenating Science In Zimbabwe” 26 Oct1, Harare,

Basopo N., Muchairi M and Naik YS. Assessment of the oxidative stress status of the freshwater snails Lymnaea natalensis after in-vitro exposure to commerical and standard pesticide products. (IPICS ZIM:02)

Elaine Chirisa and Stanley Mukanganyama, In vitro effect of selected Zimbabwean plant extracts on the activity of cyclooxygenase enzymes. (IPICS ZIM:01)

Rumbidzai Mangoyi and Stanley Mukanganyama. Secreted aspartyl proteinases: possible target for antifungals. (IPICS ZIM:01)
Rumbidzai Mangoyi, Tariro Chitemerere, Elaine Chirisa, Theresa Chimponda and Stanley Mukanganyama. Drug efflux as a mode of action of natural plant products against pathogenic microbes. (IPICS ZIM:01)

Tariro Chitemerere and Stanley Mukanganyama. Antibacterial Activities of Callistemon citrinus and Vernonia adoensis against Pseudomonas aeruginosa. In vitro effect of selected Zimbabwean plant extracts on the activity of cyclooxygenase enzymes. (IPICS ZIM:01)

Tariro Chitemerere and Stanley Mukanganyama. Antibacterial Activities of Callistemon citrinus and Vernonia adoensis against Pseudomonas aeruginosa. In vitro effect of selected Zimbabwean plant extracts on the activity of cyclooxygenase enzymes. (IPICS ZIM:01)

Teta C, Danielson L, Norrgren L and Naik YS. Detection of oestrogenic pollutants in water systems from Bulawayo, Zimbabwe. (IPICS ZIM:02)


M O Munyati, S Hatwaambo and B Mateyo, Preparation, Characterisation and Properties of Synthetic Metals: Thin Films for Electroactive Applications. (IPICS ZAM:01)

NAPRECA Zimbabwe Symposium, Harare, 2 Dec

Elaine Chirisa and Stanley Mukanganyama. In vitro antioxidant effect of selected Zimbabwean plant extracts used in the treatment of inflammation. (IPICS ZIM:01)

R.Mangoyi and S. Mukanganyama. ATP binding cassette (ABC) transporters CaCdr1p and CaCdr2p: possible target for antifungal from plants. (IPICS ZIM:01)

T. Chimponda, B. Mannervik and S. Mukanganyama. Biochemical Characterisation of two poplar Glutathione S-transferases, U16 and U45. (IPICS ZIM:01)

African Dryland Alliances for Pesticidal Plant Technologies (ADAPPT) Meeting, Pandhari Lodge, Harare, 8 Dec

Stanley Mukanganyama and Simbarashe Sithole. Evaluation of the anti proliferative activity of Maerua decumbens on Jurkat T cells. (IPICS ZIM:01)

6th International Conference of the African Materials Research Society), Victoria Falls, 11-16 Dec

Lwitiko Pholds. Structural, Optical and Electrical Properties of ZnO:B Films Prepared by DC Reactive Magnetron Sputtering. (IPPS MSSEESA)

6.4.2 Arranged conferences, workshops and meetings

Bangladesh

A workshop on 'Chemical and Biological Studies on Bioactive Plant Materials' was held in Bangladesh Institute of Health Sciences (BIHS), Mirpur, Dhaka, 31 Dec2011 - 03 Jan 2012 (60 participants) (IPICS ANRAP)

41st Training Programme, on UV-VIS & IR 29 Jan. – 03 Feb, at Bangladesh Council of Scientific and Industrial Research (BCSIR) 20 participants (IPICS NITUB)


2nd ANRAP Training Workshop on 'Chemical studies and bioassay of antidiabetic plant materials', 23-28 Jul, Research Division, BIRDEM, Dhaka (9 participants) (IPICS ANRAP)
42nd Training Programme, on On the use, maintenance and trouble-shooting of High Performance Liquid Chromatography (HPLC), at the Centre for Advanced Research in Sciences (CARS), University of Dhaka and Bangladesh Council of Scientific and Industrial Research (BCSIR), Dhaka, 8-20 Oct. (12 participants) (IPICS NITUB)

43rd Training Programme, on the use, maintenance and trouble-shooting of Common Medical Instruments, at the Bangladesh Institute of Research and Rehabilitation in Diabetes, Endocrine and Metabolic Disorder (BIRDEM), Dhaka and Bangladesh Institute of Health Sciences (BIHS), Dhaka, 26 Nov-01 Dec. (15 participants). (IPICS NITUB)

34th Annual Conference of Bangladesh Chemical Society 2011, Dhaka, 19-20 December 2011 (550 participants) (IPICS BAN:04)


**Burkina Faso**

Exceed Sub-Saharan Africa Regional Meeting, Ouagadougou, 1-3 Jan. (IPICS BUF:01)

Seminar on Mass Spectrom., Pascal Gerbaux, Univ. Mons, Belgium, at Univ.Ouagadougou, Jan 12 (IPICS BUF:01)

Kick-off meeting on Climate Change and Urban Vulnerability in Africa, Ouagadougou, 16-21 Jan. (IPMS BURK:01)

**Botswana**

Quality Assurance workshop, Gaborone Botswana, 5-8 Sep. (18 participants) (IPICS SEANAC)

**Cambodia**

Training on the use and maintenance of the GC-MS instrument at Chemistry department, RUPP, 3-31 Jan, (10 participants) (IPICS CAB:01)

Training about the theory of mass spectrometry, 9 Feb. (20 participants) (IPICS CAB:01)

Workshop on Quantification and Quality Assurance, course of theory and practical training in extraction, cleanup and analysis of real samples and the evaluation of data, focused on samples of fish and looked for contamination with PCBs and DDTs, at Chemistry department, RUPP, 3-21 Oct. (15 participants) (IPICS CAB:01)

Conference of Cambodian Chemical Society with the theme “Chemistry and Life”, at the Royal Academy of Cambodia, Phnom Penh, Cambodia, 25-26 Aug. (250 participants) (IPICS,CAB:01)
Chile

International field course on “Chemical Ecology of interactions involving insects and plants”, Reserva Nacional Río Clarillo, Santiago, Chile, October 10-19. (27 participants) (IPICS LANBIO)

Ghana

Agricultural Productivity Congress, Organized by Pan Africa Chemistry Network at the Accra International Convention Centre (AICC), Accra, Ghana; 21-23 Nov. (120 participants) (IPICS KEN:01)

AuthorAID Workshop on Research Writing, Organized by Pan Africa Chemistry Network, at the Centre for African Wetlands, University of Ghana, Ghana; 24–25 Nov. (30 participants) (IPICS KEN:01)

India

The 2nd Indian National Seminar on “Plants in Diabetes – Prospects and Challenges”, Gauhati University, India, 8-9 Apr. (300 part.) (IPICS ANRAP)

Kenya

International Year of Chemistry (IYC 2011) Launch Breakfast, Organized by the Women in Chemistry (WIC) at the Dept Chemistry, Univ. Nairobi, 18 Feb. (40 participants) (IPICS KEN:01)


1st Kenyatta Univ. International Mathematics Conference, Kenyatta University, Nairobi, 8-10 Jun. (IPMS EAUMP)

UNEP/GEF stakeholders workshop, Univ. Nairobi, Kenya; 27 Jul. (40 participants) (IPICS KEN:01)

Intl.Instrumentation Workshop on GC-MS, Organized by Pan Africa Chemistry Network at the Dept Chemistry, JKUAT, 22-26 Aug. (20 participants) (IPICS KEN:01)

1st Intl. Conf. in Mathematical Sciences, Strathmore University, Nairobi, 18-20 Aug. (IPMS EAUMP)

Pre-Symposium workshop activities, Nairobi, 1-5 Aug. (40 participants) (IPICS NAPRECA)

14th NAPRECA symposium and Ethno-veterinary medicine symposium, Nairobi, 8-12 Aug. (150 participants) (IPICS NAPRECA)

Regional Congress of Actuaries in Africa, Nairobi, 2-4 Nov. (IPMS EAUMP)
Laos
Course work on Operation and data evaluation on GC/MS, Chemistry Department, NUOL, 1-14 Nov. (5 participants) (IPICS LAO:02)
Course work installation and operation of GC/MS, Chemistry Department, NUOL, 31 Jan.-11 Feb. (10 participants) (IPICS LAO:02)

Rwanda
EAUMP Summer School on the Introduction of Riemannian Geometry at Kigali Institute of Science & Technology, Kigali, 21 Nov.-3 Dec. (IPMS EAUMP)

Senegal
Workshop on control theory – Saint Louis, 17-20 Jan. (IPMS BURK:01)
Workshop on semantic Web – Saint Louis, 7-11 Mar. (IPMS BURK:01)

South Africa
Workshop on Harmonisation of the Analytical Chemistry curriculum, Johannesburg, South Africa, 12-13 Aug. (60 participants) (IPICS SEANAC)

Tanzania
A one week seminar of the Mathematical Association of Tanzania, the University of Tumaini Iringa Branch from 12 -17 Sep. (IPMS EAUMP)
ANCAP Regional Symposium research strategies and plans for the future. Mazsons Hotel, Zanzibar, 10-13 Oct. (19 participants) (IPICS ANCAP)

Thailand
ANRAP Mini Symposium 7 Sep, at the 14th Asian Chemical Congress, Bangkok, Thailand, 5-8 Sep. (16 participants) (IPICS ANRAP)

Zambia
Southern African Mathematical Sciences Association (SAMSA) Conference ,Livingstone, 28 Nov.-1 Dece. (IPMS EAUMP)
Zimbabwe

3rd Course on: Safety in Biomedical Laboratories, AiBST Harare, 25 -29 April. (15 participants)  
(IPICS AiBST)

Ethics in Biomedical Research, AiBST Harare, 30 May - 3 June 2011 (12 participants)  
(IPICS AiBST)

NAPRECA-Zimbabwe Symposium, "Natural Products, Health, Agriculture and Biotechnology applications" Bronte Hotel, Harare, Zimbabwe, 2 Dec. (42 participants)  
(IPICS ZIM:01)

The Biochem. and Molec. Biol. Soc. of Zimbabwe (BMBSZ) Symp. on "Rejuvenating Science in Zimbabwe". Harare, Zimbabwe 26 Oct. (30 participants)  
(IPICS ZIM:01)

African Dryland Alliances for Pesticidal Plant Technologies (ADAPPT) Meeting, Pandhari Lodge, 
Harare, Zimbabwe. 8 Dec. (25 participants)  
(IPICS ZIM:01)

6.4.3 Other communications of research results

Bangladesh

A lecture on “Women’s Contribution” was given by Professor Nahar, in the seminar "A tribute to the Contribution of Women in Chemistry", Organized by Bangladesh Chemical Society on the occasion of International Year of Chemistry 2011.  
(IPICS BAN:04)

The Department of Biomedical Physics and Technology organized a workshop entitled "Looking for safe drinking water? - techniques using free sunshine and rain" on 24 December 2011 at the university of Dhaka. This is part of a project supported by UNESCO. Two booklets have been published: one in Bangla and the other in English for dissemination of the innovation of technology developed by the department.  
(IPPS BAN:04)

Prof K. S. Rabbani was the organizer of the technical programme of an International Training Workshop on “Science Education for sustained development”, organized by the Ministry of Education of the Bangladesh Government, COMSATS and UNESCO. He also presented the theme paper in the inauguration ceremony.  
(IPPS BAN:04)

A three-day public exhibition was organised of research results in the Dhaka University Senate Building Lobby, as well as a public exhibition together with a Regional Conference on Medical Physics, Dhaka University Senate Building Lobby.  
(IPPS BAN:04)

Ethiopia

Version 2.0 of the Natural Database for Africa (NDA), developed at ALNAP, was released. NDA focuses on the botany, chemistry and ethno-pharmacology of plant species and enables a user to quickly search and find basic information.  
(IPICS ALNAP)

The research group of Dr. Atalay Ayele is engaged in increasing the awareness on the potential earthquake and volcanic hazard in the country especially as the construction industry is booming. Currently the institute is hosting the Global Earthquake Model (GEM) operation manager desk for sub-Saharan Africa. On March 2011 a moderate but shallow and accordingly dangerous earthquake occurred near Yirgalem, which is one of the highly populated parts of
Ethiopia. The shaking caused by the magnitude 5.0 earthquake was felt by about 345,000 people living the area. The event was recorded by the instrument place at the institute. Drs. Atalay Ayele, Elias Lewi and Shimeles Fisseha visited the site and made a public lecture to stabilize terrified residents who were prepared to abandon the locality. Using research results and observations of the seismic and volcanic activity in the Afar region, consistent communications have been made both to the regional and federal governments on the risk of running the Tendaho Dam for downstream residents in case of failure.  

(IPPS ETH:02)

Kenya

Conducting outreach in high schools and mentoring University female students through Women in Chemistry Group where Prof Lydia Njenga is the Group Leader.  

(IPICS KEN:01)

Tanzania

Supply of brochures on safety awareness to pesticide shops in Zanzibar, Tanzania.  

(IPICS ANCAP)

Sweden

ISP collaboration seminar at the Centre for analysis and synthesis at Lund University, 10 May, and at the Department of Chemistry, University of Gothenburg, 12 May

Lydia W. Njenga, Challenges for teaching inorganic chemistry at University of Nairobi.  

(IPICS KEN:01)

Ruth Akech Odhiambo, Development of a sensor for soft heavy metals using oxathiacrown ether macrocycles.  

(IPICS KEN:01)

USA

C. Masimirembwa, Stanford, California, May 9, 2011. Drug discovery, development and optimal clinical use of medicines in Africa – the AiBST experience.  

(IPICS AiBST)

Zambia

M O Munyati made a presentation in Department of Physics, University of Zambia, part of the Department of Physics inter-disciplinary seminar series.  

(IPICS ZAM:01)

Zimbabwe

IPICS ZIM:01 has opened a website at http://www.bia.co.zw/.  

The ZIM:01 group presented their results at the Harare Agricultural Show, Harare, Zimbabwe in Aug, where members of the public visited the Biomolecular Interaction Analyses stand. The
information on the stand was on the importance of plants as a source of medicines. (IPICS ZIM:01)

The ZIM:01 group has presented their results to the Biochemistry and Molecular Biology Society of Zimbabwe (BMBSZ) as well as the Natural Products Research Network for Eastern and Central Africa-Zimbabwe Chapter. (IPICS ZIM:01)

6.4.4 Use of research results

Bangladesh

Prof Rabbani has designed and developed small electro-medical equipment like Muscle & Nerve Stimulator, Iontophoresis equipment for the treatment of excessive sweating of palms and soles, and these are being made to order of customers through the Bangladesh Institute for Biomedical Engineering and Appropriate Technology (B-iBEAT). B-iBEAT will also take the responsibility of making and promoting the equipment developed in the department. (IPPS BAN:04)

Ethiopia

Developing medicinal and aromatic plant gardens: ALNAP maintains live plants in a small garden of nearly 2,000 sq m plot of land at the Faculty of Science, AAU. Over 30 species of Aloe and many other unique species of plants grow in the garden. (IPICS ALNAP)

Zimbabwe

Contract research work was conducted on preclinical in vitro ADME on compounds from an R&D Pharmaceutical company in South Africa, iThemba Pharmaceutics. Results helped design a better series of anti-malaria drugs. (IPICS AiBST)

6.4.5 Other interesting results

Bangladesh

NITUB has repaired 102 non-functioning scientific instruments of different educational and research organizations of Bangladesh in 2011. (IPICS NITUB)

Mali

Donated fumehoods were installed by visiting instrument engineer Mr. Lars Lundmark, Umeå University, Sweden. (IPICS MAL:01)
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAMPS</td>
<td>Association for African Medicinal Plants Standards</td>
</tr>
<tr>
<td>AAU</td>
<td>Addis Ababa University (Addis Ababa, Ethiopia)</td>
</tr>
<tr>
<td>ABN</td>
<td>West African Biotechnology Network</td>
</tr>
<tr>
<td>AECD</td>
<td>Atomic Energy Centre Dhaka</td>
</tr>
<tr>
<td>AF</td>
<td>Africa</td>
</tr>
<tr>
<td>AFASSA</td>
<td>Africa-Asia-South America Coordinating Group for Natural Product Chemistry</td>
</tr>
<tr>
<td>AFR</td>
<td>Africa</td>
</tr>
<tr>
<td>AFSIN</td>
<td>African Spectral Imaging Network</td>
</tr>
<tr>
<td>AiBST</td>
<td>African Institute for Biomedical Science and Technology</td>
</tr>
<tr>
<td>ALNAP</td>
<td>African Laboratory for Natural Products</td>
</tr>
<tr>
<td>ANCAP</td>
<td>African Network for the Chemical Analysis of Pesticides</td>
</tr>
<tr>
<td>ANDI</td>
<td>African Network for Drugs and Diagnostic Innovation</td>
</tr>
<tr>
<td>ANRAP</td>
<td>Asian Network of Research on Antidiabetic Plants</td>
</tr>
<tr>
<td>AS</td>
<td>Asia</td>
</tr>
<tr>
<td>ASEAN</td>
<td>Southern African-Nordic Center</td>
</tr>
<tr>
<td>BAN</td>
<td>Bangladesh</td>
</tr>
<tr>
<td>BIRDEM</td>
<td>Bangladesh Institute of Research and Rehabilitation in Diabetes, Endocrine and Metabolic Disorders (Dhaka, Bangladesh)</td>
</tr>
<tr>
<td>BRRI</td>
<td>Bangladesh Rice Research Institute</td>
</tr>
<tr>
<td>BSc</td>
<td>Bachelor of Science</td>
</tr>
<tr>
<td>BUET</td>
<td>Bangladesh University of Engineering and Technology</td>
</tr>
<tr>
<td>BUF</td>
<td>Burkina Faso</td>
</tr>
<tr>
<td>BURK</td>
<td>Burkina Faso</td>
</tr>
<tr>
<td>CAB</td>
<td>Cambodia</td>
</tr>
<tr>
<td>CAM</td>
<td>Cambodia</td>
</tr>
<tr>
<td>CEPHYR</td>
<td>Centre for Phytotherapy and Research</td>
</tr>
</tbody>
</table>
COACH  a grass-roots organization working to increase the number and career success of women scientists and engineers through innovative programs and strategies (http://coach.uoregon.edu/coach)

CRSBAN  Centre de Recherche en Sciences Biologiques, Alimentaires et Nutritionnelles (Univ. Ouagadougou, Burkina Faso)

CSUCA  Consejo Superior de Universidades Centroamericanas

DDT  Dichlorodiphenyltrichloroethane (banned insecticide)

DICTS  Directorate of ICT Support (Makerere University, Kampala, Uganda)

Dr.  Doctor

EAUMP  Eastern African Universities Mathematics Programme

Ed.  Editor

Epub  Electronic publication

ESARSWG  Eastern and Southern Africa Regional Seismological Working Group

ETH  Ethiopia

EUR  Euro (currency units)

F  Female

FOSNNA  Food Science and Nutrition Network for Africa

FP  Framework Program

FS  Författningssamling (Statute-book)

GEM  Global Earthquake Model

GHD  GHD Pty Ltd., Australia

ICT  Information and Communication Technology

IFS  International Foundation for Science

IPICS  International Programme in the Chemical Sciences (ISP)

IPPS  International Programme in the Physical Sciences (ISP)

IPMS  International Programme in the Mathematical Sciences (ISP)

ISI  Institute for Scientific Information

ISP  International Science Programme (Uppsala University, Sweden)

IUPAC  International Union of Pure and Applied Chemistry

IUPAP  International Union of Pure and Applied Physics

JKUAT  Jomo Kenyatta University of Agriculture and Technology, Nairobi, Kenya
KEN  Kenya
KTH  Kungliga Tekniska Högskolan (Royal Institute of Technology), Stockholm, Sweden
KSEK  Thousands of Swedish Crowns (currency unit)
LAm.  Latin America
LA  Latin America
LAM  Diode Laser Optics for Training, Research and Applications in Environmental Monitoring and Medicine
LANBIO  Latin American Network for Research in Bioactive Natural Compounds
LAO  Laos
LTU  Luleå Tekniska Universitet (Lulea University of Technology), Luleå, Sweden
M  Male
MAL  Mali
MAW  Malawi
MPhil  Master of Philosophy
MSc  Master of Science
MSSEESA  Materials Science and Solar Energy Network for Eastern and Southern Africa
NABSA  Network for Analytical and Bioassay Services in Africa
NAPA  National Adaptation Programme of Action on Climate Change
NAPRECA  Natural Products Research Network for Eastern and Central Africa
NDA  Natural Database for Africa
NITUB  Network of Instrument Technical Personnel and User Scientists of Bangladesh
NMC  National Mathematical Centre, Abuja, Nigeria
NUOL  National University of Laos (Vientiane, Laos)
PACM  Pan African Centre for Mathematics
PANA  Programme d'action nationale d'adaptation à la variabilité et aux changements climatiques
PAU  Pan African University
PCB  Polychlorinated Biphenyls
PDE  Partial Differential Equations
PDR  People's Democratic Republic
PhD Doctor of Philosophy
Publ. Publication
RABIO TECH West African Biotechnology Network
ReMOA Le Réseau matériaux ouest-africain
RBM Results Based Management
RUPP Royal University of Phnom Penh (Phnom Penh, Cambodia)
SAMA Southern African Mathematical Sciences Association
SANORD Southern African-Nordic Center
SARBIO Southern African Regional Cooperation in Biology and Biotechnology
SEANAC Southern and Eastern Africa Network for Analytical Chemists
SEK Swedish Crowns (currency unit)
SEN Senegal
SFS Svensk Författningssamling (Swedish statute-book)
Sida Swedish International Development Support Agency
SIDS Small Island Developing States
SIK Institutet för Livsmedel och Bioteknik AB (Swedish Institute for Food and Biotechnology)
SLU Sveriges Lantbruksuniversitet (Swedish University of Agricultural Sciences)
SOACHIM La Société ouest- africaine de chimie
SMI Smittskyddsinstitutet (Swedish Institute for Communicable Disease Control)
TWAS The Academy of Science for the Developing World
UDSM University of Dar es Salaam (Dar es Salaam, Tanzania)
UEM Universidad Eduardo Mondlane (Maputo, Mozambique)
UGA Uganda
UHÅ Universitets- och högskoleämbetet (Office of Universities and Higher Education, Sweden)
Univ. University
UNZA University of Zambia (Lusaka, Zambia)
ZAM Zambia
ZIM Zimbabwe