S&T INTERNATIONAL

EXPLORING SCIENCE AND TECHNOLOGY INTERNATIONAL COOPERATION

VOL 1 No. 21 FEBRUARY 2011

INTERNATIONAL S&T COOPERATION DIVISION
DEPARTMENT OF SCIENCE & TECHNOLOGY
MINISTRY OF SCIENCE AND TECHNOLOGY
GOVERNMENT OF INDIA

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SCAN AROUND THE GLOBE

Cooperation in Hydrocarbon Sector

India held bilateral discussions with delegations of Nigeria, Sri Lanka and Canada on the occasion of Petrotech 2010. It also proposes securing LNG from Nigeria. For expansion of refinery in Sri Lanka, Government of Sri Lanka urged for 10C's participation in the revamp of Sri Lanka's 2mtpa refinery to 4-mtpa.

At the bilateral meeting held with the Canadian delegation, led by Mr. Ed Stelmach, Premier of Alberta, the two sides discussed possibility of shale gas, oil sands etc.

(10C Nov 16, 2010)

Global Partnership in Biotech

The Department of Biotechnology, Government of India and the Indian Council of Agricultural Research (ICAR) have recently entered into a MoU with Biotechnology and Biological Science Research Council (BBSRC), UK and Department. For International Development (DFID). The letter of intent to launch a new initiative on "Food security: Sustainable crop production research for international development" also shall establish a joint funding initiative with the aim of underpinning scientific knowledge that will increase food security and alleviate poverty.

The initiative is to forge productive global partnership between scientists in the U.K, India and other developing countries to leverage high quality biological and biotechnological research for sustainable crop production in South Asia and Sub–Saharan Africa. The total value of the initiative is estimated to be pound 20 million over a period of five years. This fund will be used to support the development of scientific knowledge and the building of sustainable research capacity that will benefit emerging economics and the developing world. It is hoped that the collaboration on global food security would harness the expertise available in UK, India, Sub- Saharan Africa and the south–east Asian region for providing global solutions to the formidable challenge of food security.

(Press Information Bureau Nov 10, 2010)

Innovation Centre

Swiss specialty chemicals company, Clariant is planning to expand its global research and development (R&D) activities at its site in the Frankfurt -Höchst Industrial Park, Germany. The company will set up a global innovation centre at an investment of over •50-mn. The new, 23,000–square-meter centre is likely to be completed by the end of 2012. It will provide space for 500 people. The new innovation centre will closely cooperate with all of the R&D satellite sites in Gendorf (near Munich, Germany), Lamotte (France) and Suzano (Brazil), as well as 40 application centers around the globe. Clariant has invested well over 130-mn Swiss Francs in R&D in 2010.

The new centre features an open architectural office and laboratory concept that combines chemical R&D activities, which belong to the company's technology services structure, with application-oriented laboratories and technical marketing functions of several business units. Besides chemical analysis, the new building will also host the new business development and intellectual property management units, as well as the patent department. Combining different disciplines will allow Clariant to further expand its R&D pipeline and strengthen its innovation power. After the completion of the successful restructuring, innovation in combination with an increased strategic focus on profitable growth will be a key cornerstone for company. The goal is to establish Clariant as an innovation leader in the field of specialty chemicals within the next few years.

(Clariant AG- Dec 28, 2010)

Sino – Swiss S&T Cooperation (SSSTC)

The Sino-Swiss Science and Technology Cooperation (SSTC) program was established in 2003, after the signing of a memorandum of understanding (MoU) between the Swiss State Secretariat for Education and Research (SER) and the Chinese Ministry of Science and Technology (MOST). Based on this MoU, steps have been taken to promote collaborations between Swiss and Chinese scientists during the pilot phase (2004-2007). The result of this pilot phase SSSTC is the establishment of a basic framework for science and technology cooperation between China and Switzerland.

The SSSTC program encourages long term partnership and aims to provide opportunities for collaboration between Swiss and Chinese research institutions. In order to broadly reach Chinese scientists, the new phase of the SSSTC (2008-2011) intends to reach beyond the MOST and to include the Ministry of Education (MOE) and Chinese Academy of Science (CAS) in the program as well. ETH Zürich remains the leading house (LH) for the program, and University of Zürich has been selected as the associated leading house (ALH) for the SSSTC 2008-2011. Through an expansion of the priority areas as well as the increased mode of collaboration, it is hoped that the action phase of SSSTC will maintain and deepen the existing communication of Swiss and Chinese scholars.

The SSSTC funding instruments are:

I. Joint Research Projects (JRP)
II. Institutional Partnerships (IP)
III. Faculty/Research Staff Exchange Grants (FE)
IV. Students Exchange Grants (SE)

Further SSTC has recently agreed to provide a maximum of 20 Internship Scholarship with last date of applications Ist March 2011. Also a joint call for JRP proposals was planned tentatively for January, 2011. A call devoted to expanded collaboration with Chinese Academy of Social Science (CASS) is expected to be launched soon.

(ETH- IIA China – Jan 18, 2011)

US – China Agreement

In January, 2011 United States and China signed an historic extension to the US-China Agreement on Cooperation is Science & Technology. The newly extended agreement will foster a continuation of decades of co-operative endeavours that have encompassed such domains as agricultural science, high-energy physics, claen energy and biomedical research.

It is noted that Science & Technology agreement was the first bilateral accord signed by the two countries after relations were normalized in 1979. In that year, they agreed that the realms of science and engineering provided a natural common ground upon which the two nations could build mutual trust and broader bilateral relations. In the 32 years since that agreement was signed, an enormous amount of a scientific and technological collaboration has been achieved. The signing of present agreement extends decades of progress well into the 21st Century.

(Office of S & T Policy US Jan 19, 2011)

Worldwide Nanotechnology Research

Despite their initial focus on national economic competitiveness, the nanotechnology research initiatives now funded by more than 60 countries have become increasingly collaborative, with nearly a quarter of all papers co-authored. Despite ten years of emphasis by governments on national nanotechnology initiatives, it is found that patterns of nanotechnology research collaboration and funding transcend country boundaries.

Sparked by programs such as the National Nanotechnology Initiative (NNI) in the United States, leading industrial nations have launched nanotechnology research programs that invested more than $ 8 m- bn in public funds in 2008 alone. China, Germany, Japan and Korea are among the many countries that have launched major governmental programs to develop their national nanotechnology capabilities as part of efforts to boost future economic growth. There is widespread anticipation that nanotechnology will be a critical component in addressing global challenges in such areas as energy, environment, health care, security and sustainability. At the same time, nanotechnology may be a key driver in the next wave of technology-led-economic growth and investment. Governments around the world are hoping that their often massive investments in nanotechnology R&D will lead not only to economic, but also to significant societal returns.

Further study has analyzed the funding sources cited in a sub-set of 61, 300 papers that were supported by grants. The National Natural Science Foundation of China was the top funder, with more than 10,200 publications representing 16.7% of all sponsored papers. Second was the US National Science Foundation with 6,700 publications. Rounding out the top five were the Ministry of Science and Technology of China, the European Union's R&D programs, and the US Department of Health and Human Services-which includes the National Institutes of Health.

(Chemical Weekly, Dec 21, 2010)

IN FOCUS

INDO-AUSTRALIA BIOTECH COOPERATION

Introduction

It is observed that India and Australia have dedicated substantial resources to support "joint research projects between their scientists. Australia is India's ninth most important partner for international collaboration. Moreover, the Australian and Indian governments both share an ambition to strengthen bilateral links in science and have allocated significant resources to help achieve this. The Australia India Strategic Research Fund (AISRF), which is jointly funded by both governments, is the most important platform for government-supported collaboration in science. Established in 2006 with an initial Australian commitment of A$20 million (80 crore), over five years, matched by the Government of India, the AISRF has been, since its inception, Australia's largest fund for bilateral research with any country. It has supported some fifty innovative and leading-edge joint projects between Indian and Australian researchers to date, across a broad range of areas of scientific endeavour. Australia provides A$ 50 million (200 crore) over five years from 2009-10 with matching contribution from India.

Areas of Collaboration

Both countries collaborate in areas like agriculture, water, energy and health and have complementary strengths in other fields like nanotechnology and astrophysics. India is a capable and increasingly dynamic player in international science, technology and research, both in publicly-funded research and the private sector. Australia, for its part, have a strong culture of research centred on Indian universities, which consistently rank among the world's best. The biotechnology fund, delivered by India's Department of Biotechnology and the Australian Department of Innovation, Industry, Science and Research, supports joint research projects in areas including biomedical devices and implants, stem cells, bio energy, vaccines and diagnostics, transgenic crops and bioremediation. Some 21 projects are currently underway, involving Indian researchers from the IITs, IISc, AIIMS, CSIR labs, the LV Prasad Eye Institute and other eminent institutions, partnered with counterparts at peak Australian universities and research institutes.

The biotechnology fund, however, is just one part of the framework to support bilateral collaboration. In parallel to biotechnology fund, Australia works with India's Department of Science and technology to deliver an Indo-Australian Science and Technology Fund. This fund supports a broad spectrum of joint projects, including in the areas of nanotechnology, astronomy and astrophysics, agricultural research and marine science.

Other significant developments in the bilateral relationship include a number of new partnerships between Australian and Indian institutions to deliver joint doctoral programs. Australia's Monash University and the Indian Institute of Technology Bombay launched the IITB-Monash Research Academy in November 2008. Around fifty students are currently enrolled and the Academy expects to grow to around 300 students the 2016.

Some Successful Projects

Researchers at the LV Prasad Eye Institute Hyderabad are working with an Australian team led by the Centre for Eye Research Australia and the Mawson Institute to develop a contact lens that will restore sight to people with damage to the corneal epithelium, the outermost layer of the eye. Using technology first developed to treat burns, the scientists are developing techniques to culture and then transplant the patient's own stem cells to the surface of the affected eye using a specially-manufactured contact lens. It is hoped this method will offer a cheaper and more effective alternative to current techniques for corneal epithelia transplantation.

Leading researchers at the Indian Agricultural Research Institute and Australia's Murdoch University will identify target genes to control nematode pathogens as a first step to developing transgenic nematode resistance in wheat and sugarcane crops.

(Above is based on the report by Scan Starmer, Senior Adviser S&T, Australian High Commission, as appeared on Bio tech News of August 2010.)

SPECIAL FEATURE

INDIA–USA PERSPECTIVE IN PHARMACEUTICALS COOPERATION

Indian Drug Manufacture's Association (IDMA) recently made a representation to Department of Pharmaceutical, Ministry of Chemicals & Fertilizers, highlighting the current state of the industry in the US and India, the opportunities for collaborations between the two nations and the concerns that need to be addressed when entering into any comprehensive agreement with the US. The special feature in this issue is based on some pertinent extracts from same as appeared in Chemical Weekly of October 19, 2010.

Pharma Industry in India

The Indian pharma industry has grown exponentially from Rs. 10 crore (about $2- mn) in 1948 to over Rs. 100, 000-crore ($ 21.65- bn) today, a growth rate of over 15%. The industry is on track to grow about 13% this year, to just over $24-bn. There are over 10, 000 pharmaceutical units, including large, medium and small sized units in the industry, with about 77% units making formulations and about 23% units manufacturing APIs, producing and providing almost all of the formulations and over 90% of API requirements. It is estimated that every third tablet consumed in the world is made in India. India is ranked third in terms of production volume and 13th in terms of value, contributing 10% of world production, but only 1.5% of value. India's drug industry produces more than 400 different APIs and is among the world's top-five API producers, accounting for approximately 40% of the world's API requirements. One reason for lower value share is the lower cost of drugs in India-ranging from 10% to 50% less, as compared to developed countries. The growth had been fuelled by exports and its products are exported to more than 200 countries, with a sizeable share in the advance regulated markets of US and Western Europe.

The industry employs over 4.2-mn personnel, both in manufacturing and ancillary sectors. More than 150 factories are approved by US-FDA, UK-MCA, Australian and South African authorities and many more are holding WHO-GMP certificates. It is taking significant strides in innovative drug discovery, with clinical trials underway for 34 molecules. The number of compounds in the Indian pipeline and in advanced stages of developing is also increasing. However, Indian pharma does not have the financial muscle to develop such drugs and relies heavily on out – licensing of such molecules to fund their research pipeline.

Pharma Industry in USA

The pharmaceutical industry in USA operates in a comparatively free market, and focuses on research and development. It has, in fact, emerged as the leader in the global pharmaceutical industry. While the global pharmaceutical market is worth $ 615- bn, the North American market (comprising USA and Canada), occupies the largest share (47.7%). In the span of a decade or so, the US pharmaceutical industry has discovered as many as 370 new drugs for different diseases. Medicines to counter hypertension, alzheimer's disease, arthritis, parkinson's, cancer, depression and diabetes have been discovered.

The recent technological innovations have paved the way for a new phase in the pharmaceutical industry. Drugs have been developed to treat the root cause of disease. The science of genomics has played an important role in this advancement.

Advantages India Offers

To deal with the rising costs of drug discovery and development, big pharma companies have started looking at low cost destinations like India for cost containment. India is not only a low cost destination, but is also an attractive pharmaceutical market that is expected to grow at more than double the growth rate of the global pharma market, primarily because of its huge domestic requirements. The disease profile in India, includes diseases like malaria and tuberculosis, and is different from that in the regulated markets like USA. Big pharma can focus their research efforts to find solutions for such diseases by collaborating with Indian companies. Labour costs are 50-55% cheaper in India than in the West. Infrastructure costs are 40% lower and fixed costs are estimated to be 12% to 20% less than in the US and Western Europe. India can produce APIs that cost 60% less than in the West and opening a production plant in India is 40% cheaper than in US and other developed countries.

Clinical trials in India cost approximately $ 20- mn, as against $300-mn to $350-mn in the West. The Contract Reserch and Manufacturing Services (CRAMS) sector is growing at 15% to 20%. Further India's growing respect and legal/regulatory framework for intellectual property rights (IPR); favourable economic policies, making it an attractive investment destination; and availability of huge talent

pool for sustaining and growing operations is making the country an attractive destination for US companies.

As for Government's assistance, the Department of Pharmaceuticals, Government of India, is working with a vision to make India one of the top five global pharmaceutical innovation hubs by 2020. At present, 100% FDI is allowed under the automatic route in the drugs and pharmaceuticals sector, including those involving use of recombinant technology. The Government plans to set up a $ 430.5-mn corpus fund for the pharma industry and provide requisite support to industry by way of world-class infrastructure, internationally competitive scientific manpower for pharma R&D and venture funds for research in the public and private domain.

Issue Challenging USA

Various issues which challenge US companies are broadly as follows:

(i) Patent expiry and thin pipeline of new drugs;(ii)Reducing drug approvals (iii) Declining R&Dproductivity; (iv)StringentFDA regulations; (v)Increasing development costs;(vi)Increasing generic penetration into prescription markets;(vii) Increase in the time period for clinical trials due to tightened drug safety regulations leading to higher development costs; and(viii) Increased time–to – market.

The rapid hike in prices, coupled with an overall economic slowdown and rising federal deficit, is placing great strains on the systems used to finance heathcare in USA. High priced prescription drugs, aging of the population, administrative costs, spending on chronic disease etc. are also driving up heathcare costs to unmanageable levels. Hence there is pressure on pharma companies to reduce/renegotiate prices of medicines.

Solution by India

As US companies adopt different strategies and look opportunities to reduce cost, improve efficiencies, improve pipeline and reduce the time-to-market , India offers them solutions like outsourcing of manufacturing, research, clinical trials etc., with improved costs, process and capabilities. Indian companies are well known at leveraging their skills and competencies to improve process know how. Indian CRAMS players also provide services like clinical development, commercial batch manufacturing, API manufacturing, packaging etc., while employing latest manufacturing facilities and techniques. Indians are also good at understanding and meeting multiple regulatory requirements.

Conclusion

Keeping above and also some other related points in view it is felt that India-USA cooperation in the field should be governed by following broad points.

1. Mutual recognition of regulatory procedures or regulatory cooperation with USA as it is a leading importer of drugs and pharmaceuticals from India.
2. US pharmacopoeia (USP) has been showing keen interest in strategic collaborations with the Indian Pharmacopoeia Commission (IPC) to source monographs of certain drugs for inclusion in their editions, impressed by the lead taken by IPC in including anti-AIDS drugs, herbs and herbal formulations in IP.
3. India – USA Co-operation in Pharmaceuticals or FTA should not include any item relating to IPRs, as IPR rules and regulations have already been internationally agreed to under TRIPS and WIPO agreements.
4. USA seems to be insisting on and attempting to impose Patent Linkage and Data Exclusivity Accepting such linkages in FTAs, is expected to be detrimental to India indigenous generics pharma industry.
5. Definition word 'Counterfeit': In USA and EU, the phrase 'counterfeit' includes 'trade marks violations'. Trademarks violation is a punishable offence. India may accept nothing more than the WHO 1992 definition, which relates only to 'health affecting' issues.
6. Confiscation of pharma goods at transit ports: USA should agree to strictly follow the GATT Rules of not hindering the passage of goods destined for other ports.
7. IPR Enforcement: USA might insist on clauses to enforce IPR judgements promulgated in those countries to be enforced by India. We may not agree to abide by the same, without considering the implications on Indian industry and people.Even collaboration in IPR training, IPR awareness programmes etc. should not be accepted in any such agreements, as other more competent agencies such as WTO, WIPO will take care of such matters.
8. Sensitive List: If India enters into a trade treaty with the US, then it should keep all important products in which it specialize in a 'sensitive list' so that it is not required to import them at zero duty. Herbal products should also be included in the sensitive list, in order to save them from unwanted exploitation.

JOINT PROJECT PROPOSALS

INDO - KOREA

The Department of Science and Technology (DST), Ministry of Science and Technology of Government of India, and National Research Foundation of Korea (NRF), Ministry of Education, Science and Technology (MEST), the Republic of Korea, are the key agencies dedicated to the implementation of the programme of cooperation in S&T in India and the Republic of Korea (South Korea). They call for proposals for bilateral cooperation program. Potential areas of Cooperation are in the field of Transportation, Robotics & Engineering Sciences, Nutrition & Food Safety, Renewable Energy, Chemical & Biochemical Technologies, Health & Medical Science, Material Science & Technology, Water Resources & Environment, and Information Technology.

Eligibility

The programme is open to scientists, engineers, institutions located in India or the Republic of Korea that are engaged in advanced research in one or more of the subject areas listed above. DST and NRF will conduct parallel review of the applications respectively based on the agreed criteria. Project proposals must be submitted to both DST and NRF by 5:30 pm local time (respective to each country) on February 28, 2011.

Kind of Support Available

Basically, each selected project will be funded for a period of three years. However, projects of both sides must pass the annual evolution in each country for continuation of funding. To facilities the objective of the Project, the manpower cost, consumables and minor equipments, research expenses, project related visits of Indian and Korean researchers to the counterpart country may be supported. This funding will cover the following expenses in connection with a project:

(i) ***Support for research expenses:*** Expenditure by project team in their country would be borne by the respective country, i.e., DST would support expenditure on Indian side of the project whereas NRF would meet the expenditure of Korean side. Participating Indian institutions are responsible for expenses regarding equipment.

(ii) ***Support for Exchange visit component:*** The sending side will provide roundtrip economy-class airfare to the relevant entry city of the host country as well as medical insurance. The receiving side will provide accommodation and living expenses, i.e. transportation including pick-up service to and from the airport, food, etc.

(iii) ***Institutional Overhead:*** Institutional Overhead can be considered @ 10% Research expenses and 5% on exchange visit component. (Indian side), Institutional Overhead will be determined in accordance with specific R&D program regulation of Korean government.

Korean and Indian applicants shall write a common application to be submitted to both DST and NRF. The common application must be written in English.

Assessment Procedure

All applications received by the notified deadline will undergo a peer review process and then be referred to an independent advisory panel for consideration and ranking. Applications must attain a positive rating to be considered eligible for funding. Joint selection of successful applications by DST and NRF will be discussed by the respective nodal agencies and informed by the rankings. Decisions made by the India-ROK Joint S&T Committee will be final. The following criteria will be taken into consideration for selection of proposals:

(i) The scientific merit of the collaborative project.

(ii) Scientific excellence of the projects.

(iii) Mutual advancement of research through the transfer of knowledge and expertise.

(iv) Ability of the teams to successfully complete the project.

(v) Expected research outputs.

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SCAN AROUND US

Co – operation in Skills Development

As Germany and India focus on enhancing their strategic bilateral partnership, one field of increasing importance is the training of skilled personnel. A combination of the available workforce in India and Germany's famed dual training system can prove a successful mix. As India aims to ensure it has 500 million skilled people by 2022, the first tiny steps towards an Indo-German partnership have been taken. In 2008, the German and Indian Governments set up a bilateral working group on Vocational Education & Training (VET). Led by the Indian Ministry of Labour and Employment, the Indian side includes members of the two major industrial associations-the Federation of Indian Chambers of Commerce & Industry (FICCI) and the Confederation of Indian Industry (CII). The German side is led by the German Ministry of Education and Research. Members include representatives of the chambers of crafts and industries, the Federal Institute for Vocational Education and Training (BIBB) and iMOVE, the provider of 'Training–Made in Germany'. With such resources coming together, Indo–German collaboration is expected to have a great future.

In fact both countries agreed to enhance cooperation by providing a platform for the "Train – the–Trainers" programmes. Another point on the agenda was support in establishing sector skills council in food processing and retail trades, the media industry, as well as the tourism and health care industries. An important area of focus that has come to the fore in recent times is the Business-to-Business (B2B) collaboration. This means to work together to provide a platform for contacts and collaboration between Indian companies seeking partners in skills development and German training organizations seeking partners in India. India has a fast growing economy and there are huge opportunities for cooperation between India and Germany, especially in this field.

(The Hindu, December 7, 2010)

France – India Scientific Research

The promotion and emphasis on scientific and technological research in both countries has allowed for numerous platforms for collaboration and interaction in the sciences at the highest levels. Long established and successful scientific partnership at all levels (from researchers-to-researchers to formal agreements between institutes and joint laboratories) has flourished between the two countries. India and France have traditionally collaborated in fundamental research in the natural sciences, particularly in mathematics, astronomy, physics, chemistry and life sciences.

New areas of co-operation are fundamental and applied research in medicine, environment, sustainability and climate change, nanotechnologies and aerospace. India and France have set up a number of joint structures of research, collaborative projects and networks, and two research departments of the CNRS, the Institute Francais de Pondichery and the Centre de Sciences Humaines Delhi are based in India.

(www.frenchsciencetoday.org Dec 7, 2010)

India–US Clean Energy Centre

An agreement for setting up joint Clean Energy Research and Development Centre was signed between Ministry of Science & Technology, Government of India and US Department of Energy. The agreement would facilitate establishment of India–US Clean Energy Research and Development Centre to facilitate joint research and developmentfor clean energy technologies. Initial priority areas to be addressed will be solar energy, second generation biofules and buildings efficiency. The Centre will involve active participants of academic and private sectors of both countries working in a consortia mode. The consortium will be self–selecting teams with entities or individuals from national labs, academic institutions, private sector, NGOs etc. Awards will be made to consortia which have knowledge and experiences to undertake first-rate collaborative research programmes. The consortia will leverage existing resources and physical infrastructure and bring together talent from both countries.

The agreement is valid for 10 years to be renewed for periods of five years so long as Bilateral S&T agreement is in force. Government of India will

provide equivalent of US$ 5 million each year and the same amount of US$ 5 million would be provided by US Government each year for 5 years.

(PIB – Nov 9 , 2010)

Indo – Bulgarian Cooperation

With a view to intensify interaction call for proposals-2011 of Indo-Bulgarian Bilateral Scientific Cooperation programme lays special emphasis on further academic training and specialization of scientists/scholars. Identified study subjects are, Information Technology, Metal Sciences and New Materials, Nano-materials, High Energy Physics, Satellite Technology, Alternate Renewable Energy Sources, including Solar Energy, Geophysical Instrumentation and Earthquake Engineering including its forecasting, Food Technology, Biotechnology (including gene- biotechnology), Medicine (especially, Traditional Medicines based on herbs), Laser Science and Technology, Astronomy, Ocean Science and Technology.

Grant offered is strictly limited to participants mobility (travel costs and daily subsistence allowances) within the framework of well–defined and approved Indo- Bulgarian research projects normally of two to three year duration. The sending side shall cover the expenses on international travel (including overseas medical insurance) up to the capital city/city of arrival in the host side both ways. The receiving side shall arrange the in country travel of the visiting scientist from the capital city/city of arrival to the place of the institute to be visited by appropriate means and living expenses.

Joint research projects in the prescribed format duly forwarded by the Head of the Institutions are to be submitted simultaneously, by the Indian Project Leader to the Department of Science and Technology, New Delhi and, by the Bulgarian Project Leader to the Ministry of Education and Science Bulgaria. Last date for receipt proposals is March 15, 2011.

(DST – Jan 15, 2011)

Syria – India MOU

India has signed a Memorandum of Understanding (MoU) with Syria for long term cooperation and setting up of joint venture plants in Syria in the phosphate sector. The MoU, signed by the Secretary (Fertilizers), and the Syrian Minister of Petroleum and Natural Resources envisages a Broad framework of long term cooperation between the two countries through their respective fertilizer and mining entities for setting up of phosphatic plants and projects in Syria. Syria has proven reserves of rock phosphate estimated at 1700 mt. The Syrian mining and fertilizer company, General Company for Phosphates and Mine (GECOPHAM), which is responsible for mining operations in Syria, is presently able to exploit only about 4- mt of rock phosphate annually, but is planning to upscale its production to 10–mt.

(Chemical Weekly Nov 9, 2010)

TERI – Deakin University MoU

The Energy and Research Institute (TERI), New Delhi and Deakin University (Australia) have signed a Memorandum of Understanding (MoU) to announce the setting up of a Centre of Excellence, the 'TERI-Deakin Nano Biotechnology Research Centre' in the field of Nano-biotechnology in India. This development is an outcome of TERI's core capability of knowledge creation and development of efficient, environment-friendly technologies and Deakin's India Research Initiative (DIRI), which is committed towards establishing a lasting associations with vi-brant culture of research and scholastic excellence. The initiative is also aimed at bridging the gap between industry and academia through research and collaboration of world leading experts, which will enable efficiency, effectiveness and provide solutions for a sustainable future through the utilization of biotechnology.

The centre will be located at TERI Gram, Gurgaon and envisages that within five years the centre will have approximately 70 researchers, including 50 Ph.D students enrolled at Deakin and co- supervised by Deakin and TERI practitioners. Understanding the physico-chemical interactions of various molecular materials and their behaviour in biological systems presents a range of exciting research problems within 'bio- nanotechnology' that the new TERI–Deakin research center aims to address. The technology is viewed to go a long way in helping a country's food security issue, provide benefits in the area of health as well as address environmental issues.

(TERI – Jan 4, 2011)

EXPERTS CONVERGE

International Training on IPR

There is a sense of urgency in developing IP systems in each country to derive maximum advantage from the IPR system to address efficient utilization of innovations and creativity.

Considering the increasing significance of IPR related issues and assessing the need of direct participation of scientific community of the developing globe in legal management of science, the Centre for Science and Technology of the Non- aligned and Other Developing Countries (NAM S&T Centre) in association with the Patent Facilitating Centre (PFC) of the Technology Information, Forecasting and assessment Council (TIFAC), Government of India organized a six days 'International Advanced Training Course on Intellectual Property Rights (IPR) for NAM and Other Developing Countries'. The theme of the training course was 'Development of IPR Systems for National Growth' and its objective was to create awareness among scientific community about the legal framework of scientific inventions and practices in developing countries. The programme was supported by the Department of Science and Technology, Government of India.

The training course was attendant by 49 trainee participants from 28 countries including Botswana, Brazil, Cambodia, Egypt, Ghana, India, Indonesia, Iran, Jamaica, Kenya, Malawi, Malaysia, Mexico, Myanmar, Nepal, Nigeria, Pakistan, Panama, Peru, South Africa, Sri Lanka, Sudan, Tanzania, Turkey, Uganda and Zambia, of which 18 delegates were from the host country India and the remaining 32 represented other developing countries.

The brainstorming discussion among the participants and the trainers was finally concluded with significant outcome, and to ensure the sustainability the participants, trainers and organizers unanimously adopted the 'Manesar Resolutions'.

Roadmap in Research & Innovation

The conference on the subject, India -EU and Member States Partnership for a Strategic Roadmap in Research and Innovation, held in November 2010 mobilized policy makers, administrators and stakeholders of research and innovation for exploring new ways and mechanisms for India-EU and Member States to work together more effectively and realize more fully the societal benefits flowing from the 2007 India-EU Science and Technology Ministerial Conference.

It took stock of good practices and multilateral cooperation initiatives, programmes, institutional entities and tools existing between India and the EU/ Member States and identified ways forward for a collective response in resolving global societal challenges. The solution for water and bio-resources related challenges have been identified by all partners as one of the priorities for the development of a strategic roadmap in research and innovation cooperation.

The conference mapped out ideas and put forward recommendations (a blueprint) for the development and implementation of a strategic roadmap in research and innovation between India-EU and Member States based on:

(i) More effective and coordinated India – EU and Member States research and innovation activities.

(ii) More efficient use of existing and future resources and instruments to support strategic cooperation of India-EU and Member States in addressing global societal challenges.

(iii) Identifying together through appropriate mechanisms and dialogues ways to address global societal challenges, such as water related challenges, including their health, food, environment and industrial innovation related aspects.

Conference is expected to be starting ponit for similar events dealing with other global challenges such as climate change, energy, food security and global health in future.