

ENSEMBLE

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Newsletter of the Indo-French Centre for the Promotion of Advanced Research



Indo-French Centre for the Promotion of Advanced Research

Broader Vision | New Identity

editor's note

The depth of Indo-French cooperation across a wide range of arenas of human endeavour was quite evident during the recent state visit of the honourable French President Mr. François Hollande to India. The positive attention that CEFIPRA attracted during the visit is a matter of great satisfaction. While accolades give a sense of fulfilment, there are always accompanied expectations and responsibility.

Having successfully linked Indian and French scientists over the years, it is now time to recalibrate the thrust of CEFIPRA's efforts in a rapidly evolving national and international S&T landscape. The Governing Body that met on 7 February at Paris focused on consolidation and diversification of CEFIPRA's mandate in advancement of science. Improving the impact of knowledge supported and catalysing S&T intervention across the stages of innovation cycle should be the key priorities for CEFIPRA in the times to come.

Our new logo, as highlighted on the cover, is an expression of the aspirations and resolve of an organization mandated to bring two nations nearer through knowledge generation and innovation.

In continuation of our efforts, on the sidelines of the French Presidential visit, CEFIPRA and Saint Gobain Research India Ltd. signed a LOI to create an Innovation Program in the field of sustainable habitats in hot and humid climates. Launching of Raman-Charpak Fellowship for mobility of doctoral students and a scheme to support the participation of Indian students in the European School of Nano science and Nanotechnology (ESONN) are some of our new initiatives to further strengthen people to people ties between the two nations. All this has been described in detail in the pages that follow.

As we embark on this journey of uncharted territory, your cooperation, suggestions and feedback will be critical in our ability to succeed in this mission.

A bientôt! Till the next time! ●



Debapriya Dutta
Director, CEFIPRA

Joint Statement issued by India and France during the State Visit of the President of France to India

February 14, 2013

At the invitation of the Prime Minister of India, the President of the French Republic paid a state visit to India during February 2013. Dr. Manmohan Singh and Mr. Francois Hollande had detailed and useful discussions on bilateral, regional and international issues of mutual interest. Science & Technology issue formed an important component of the dialogue. Excerpts :



Exchanges :

The Leaders agreed to encourage closer people –to-people contact, through inter alia, easing mobility and human exchanges and promoting education, science and cultural cooperation as well as expanding trade and investment.

To this end, both sides have decided:

- to foster comprehensive sustainable urban development cooperation, including infrastructure, transport, water, waste management as well as urban planning;
- to give an impetus to the cooperation on railways between Indian and French railways; a Memorandum of Understanding between Ministry of Railways and SNCF (French National Railways) has been agreed in this regard;
- to facilitate and support investments from French companies into India and Indian companies into France which contribute to growth and employment in both countries;
- to foster people mobility between the two countries. To that end, both sides noted the progress in the negotiations of a bilateral agreement on people mobility and migration, with a view to conclude them as soon as possible;
- to build an ambitious education plan, including twinning of higher education institutions, mutual recognition of degrees, research collaborations and training of teachers. A Letter of Intent and several agreements between Indian and French Universities and Institutions have been signed in this regard. We encourage greater student exchanges between both countries;
- to bolster research, technology and innovation between our research institutions, universities and business. To that end, we decided to launch the "Raman-Charpak Fellowship" which will enable exchange of doctoral students between the two countries and, in order to broaden the scope and depth of future engagements in science, technology and innovation, we have concluded several memorandum of understanding and letter of intent between Institutions. Both sides noted with satisfaction the silver jubilee celebrations of the binational Indo-French Centre for the Promotion of Advanced Research. It was also noted with satisfaction that France will be the partner country for the 2013 Global Technology Summit to be held in New Delhi. ●

Space :

In space, the Leaders agreed to move forward, after the success of Megha-Tropiques satellite launch in October 2011 and the upcoming SARAL satellite launch. Both satellites contribute significantly to environmental and maritime survey purposes.

As next step, the Leaders acknowledged the ambitious follow-on space cooperation proposals drawn by the space agencies as an outcome of successful Science Seminar and Research and Technology Workshop held at Bangalore during February 5-6 2013.

Energy :

In the field of energy, the Leaders expressed satisfaction with regard to ongoing collaborative projects in R&D on the peaceful uses of nuclear energy and agreed to further strengthen bilateral civil nuclear scientific cooperation.

Climate Change :

On climate change, the Leaders agreed to remain engaged under the Durban Platform to favour an ambitious, development-oriented, inclusive response, in preparation for equitable and comprehensive outcome under the UNFCCC at COP21.

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INDIA

25 years of CEFIPRA

Common Goals.....Shared Vision



With increasing intensity of ties between India and France the opportunities of collaboration on S&T issues have also become more manifest. It is now recognised that the two countries need to join forces to tap the complimenting strengths of their S&T institutions and human talent to find solutions to problems faced by their citizens

Remarks by **Ms. Geneviève Fioraso**
Minister for Higher Education and Research
Govt. of France
Excerpts

as well as those in other parts of the world. During the recently concluding visit of the President of France to India, the two ministers came together in Delhi to celebrate 25 years of CEFIPRA's existence as well as to dwell upon the path and prospects of CEFIPRA's endeavors in the years ahead.

Remarks by **Shri Jaipal Reddy**
Minister of Science & Technology & Earth Sciences
Govt. of India
Excerpts



It is a pleasure for me to be here with you today in Delhi to celebrate Indo-French cooperation in the fields of higher education and research. In the past 3 years, the number of tie-ups between Indian and French institutions of higher learning has more than doubled to 400 such arrangements. They involve student and research staff exchanges, joint publication programs and research facilities at every level and in every field. Currently, 30 Indo-French joint degrees and twinning programmes bring together our student and academic communities.

Today, French institutions offer more than 700 courses and degrees taught entirely in English. Every year, about 250,000 Indian students go overseas for a course of studies which puts France at second place in continental Europe for its Indian student population. Their number has increased by 50% in the past 5 years. Since spring 2012, temporary work visas are readily available for Indian graduates of French higher education institutions, who wish to work in our country and gain professional experience.

The vitality of French research is reflected in the activities of the Indo-French Centre for Advanced Research, or CEFIPRA as we know it in France. The decision of our two governments to create an autonomous bilateral funding agency, the CEFIPRA, in 1987 was a visionary decision. Today many partners have followed the same path: the United States in 2000 and Germany in 2010.

I am also proud to see that CEFIPRA is taken as a model in the framework of the European project SI INDIA-House,

coordinated by France, which aims to study the best ways for Europe to cooperate with India.

At the occasion of its 25th anniversary, the CEFIPRA evolved with the creation of four windows ensuring transparency to fund Indo-French programs in research and innovation. A new director, whom I congratulate, has been recently appointed and will have to complete the expansion of this organization, a necessary change led by the growth of our partnership.

The primary goal of CEFIPRA is to provide a platform to French and Indian industries in collaboration with research institutions and universities and to ensure that industry and society as a whole benefit. Research in public-private partnership is vital for our economy because it improves the growth and innovation of our businesses.

Ladies and gentlemen, Tagore once said: "You can't cross the sea merely by standing and staring at the water." Nobody knows this better than you, who are assembled here today. You cross seas, you cross continents, every year, to bring together French and Indian research communities, to give life to a common vision. ●

France and India are two great democracies of the world with deep rooted cultures. The tradition of friendship between the two great nations has stood the test of time. It is pertinent to note that scientific and technological collaboration between India and France was initiated way back in 1966 through the Inter-Governmental Agreement for Cooperation that which was subsequently renewed in 1978. With significant progress in all areas of bilateral cooperation since 1998, this relationship has transformed into a strategic partnership

The scientific communities of the two countries have greatly benefited from the activities of CEFIPRA. More than 450 research projects have been supported across various disciplines. This has resulted into nearly 1500 publications in internationally peer-reviewed journals even as more than 800 PhD and post-doctoral positions having been offered through the Centre. Several doctoral and post doctoral students supported by CEFIPRA have emerged as leading scientists in their respective fields.

CEFIPRA has enabled networking between various S&T institutions and

laboratories across India and France facilitating continued cooperation between the scientific communities of the two countries. Virtual centres and joint laboratories created over the last two decades highlight the spirit of "joint research" fostered by CEFIPRA.

CEFIPRA has catalysed the continuum between research, market and societal needs. Other than generating a sizeable number of patents, an affordable drug Misoprostol has been launched in the market. We need to create more such examples in future through active academia-industry partnerships.

India has declared the current decade as the "Decade of Innovation". I believe that the French National Research and Innovation Strategy of 2009 also emphasizes a similar pathway. We therefore have a common ground to embark upon programs which are aligned with our national priorities. CEFIPRA in its future strategy should mount initiatives that would strengthen the cooperation in innovation and techno-entrepreneurship. This will have a sustainable long-term benefit to the economies and societies of the two nations and will also promote a broad based engagement across various entities.

I wish that future activities of CEFIPRA should continue to strengthen pillars of our bilateral strategic partnership. With 25 years of experience under its belt, I am sure CEFIPRA will be able to build and embark upon a new vision and direction. This should pave way to address not only the contemporary needs of both our nations but shall also generate global common goods at large. I wish all the success to CEFIPRA in this endeavour. ●



Ms. Geneviève Fioraso,
Shri Jaipal Reddy and
M. Pallam Raju
Minister of Human
Resource Development, Govt. of
India at the 25 years of CEFIPRA
celebrations

CEFIPRA

Broader Vision | New Identity

Institutional logo is one of the key fundamental elements of visual identity building process for an organization. A corporate logo with its graphical properties can communicate what the organization is and what it stands for.

Having completed 25 years on the ground CEFIPRA felt the need for a logo that adequately represented its culture, antecedents and objectives. The quest has resulted in a new logo for CEFIPRA that shall now be at masthead of all CEFIPRA's endeavours.



Ms. Hélène Duchène and Dr. T. Ramasami unveiling the new logo of CEFIPRA during 26th meeting of CEFIPRA's Governing Body in Paris on 7 February, 2013



Overall Visual Identity reflects two country's collaborative approach in various aspects of Science and Technology through letter form I for India and F for France in abstract form.

The Top circular form of the Letter 'I' and 'F' depicts Human form in abstraction.

This concept denotes the collaboration of two countries' scientific community coming together for social common good.

The formation of this form using various tonalities of blend colour using triangular shapes depicts the networking and coming together on the cutting edge science and technology research in multiple areas.

Colour in this visual identity have specific connotation representing two countries flag colours and beyond flag colours.

Letter form 'I' consists of Orange merging into Green. Orange colour denotes creativity and enthusiasm for the S & T applications which is developed considering global challenge in sustainability aspects using colour Green.

Letter form 'F' consist of transition from Blue to Red, which denotes Limitless opportunities in the S & T research for Life and vitality.

Dispersed dots denotes the spread of knowledge and building knowledge bridge between two countries. ●

26th MEETING OF THE GOVERNING BODY OF CEFIPRA

The 26th meeting of CEFIPRA's Governing Body (GB) was held at Paris on February 7, 2013. The meeting was co-chaired by **Ms. Helene Duchene**, *Directrice des politiques de mobilité et d'attractivité Ministère des Affaires étrangères* and **Dr. T. Ramasami**, *Secretary, Department of Science & Technology, Government of India*.

The meeting was marked with enthusiastic participation of representatives from various French S&T agencies viz. the Direction General for Innovation, the Division for International Cooperation of French Ministry of Research, Ministry of Higher Education, OSEO, Observatoire des Sciences et Techniques, CNRS, INRA, INRIA, INSERM, CEA, ENS-Cachan, and Agreenium.

Dr. Debapriya Dutta was welcomed as the new Director of the Centre.

Progress in the programme portfolios of CEFIPRA was reviewed in the meeting. During the last one year eighteen new Scientific project proposals had been supported in the areas of Computer Science(1), Life & Health Sciences(8), Physics(2), Chemistry(2), Earth and Planetary Sciences(1), Materials Science(2), Biotechnology(1) and Information Technology(1). During this period, forty six projects were under implementation and twenty projects had been completed, significant among them were in the areas of Catalysis, Proteomics, Wireless networks and Magnetic materials. The completed projects resulted in 110 Publications, out of them 13 were in high impact journals like Cell, Journal of American Chemical Society (ACS), ACS Nano, Astronomy & Astrophysics, New Journal of Physics etc. Academia-Industry interaction had been strengthened by supporting five on-going projects under the Industrial research programme in the areas of catalysis, ceramic engineering, air pollution monitoring and information technology. Interaction between Indian and French scientists had been initiated through six seminars supported in the areas of optics, ceramics, advanced mathematics, energies and smart system integration.

The major role of CEFIPRA in Indo-French S&T



cooperation and the scope of its emergence as an important platform for Indo-French Cooperation were highlighted in the meeting. Emphasis was laid on enhanced visibility of CEFIPRA for taking the Indo-French S&T cooperation forward through new mechanisms of public-private partnership, catalysing innovation, establishing virtual network centres and enhancing mobility of scientists and students of the two countries.

The core programmes of CEFIPRA were analysed in light of the evolving Indo-French S&T landscape and the emerging opportunities for its enhanced role as a catalyst for national funding agencies to target higher dimensions through international collaborations. In this context, establishment of Indo-French Center for Applied Mathematics (IFCAM) by DST-CNRS, INRA-DST programme on Water Management in Agriculture and ANR-DST programme on Engineering Sciences and Infectious diseases were noted with appreciation. It was also noted that more such linkages were in offing.

The mobility of Ph. D scholars have been enhanced with finalisation of the Raman Charpak fellowship programme to be launched during the State visit of the French President to India in February 2013.

The co-chairs unveiled the new logo of CEFIPRA during the meeting as well launched the first issue of ENSEMBLE, the bimonthly newsletter of CEFIPRA. ●



CEFIPRA and Saint Gobain Research India sign Letter of Intent

Recognising the willingness on part of private sector organisations to contribute to Indo-French scientific collaboration and their wish to use CEFIPRA's experience to pursue their objectives in this context, CEFIPRA has recently launched its new initiative called INNOVATION PROGRAMS.

Under the of aegis this new initiative, CEFIPRA and Saint Gobain Research India Ltd. (SGRI) (a cross functional R&D centre of Saint Gobain engaged in developing sustainable habitat solutions in hot and/or humid climates) have signed a Letter of Intent for creating a new Innovation Program called "sustainable habitat for hot and/or humid climates".

The main topics covered by the program will be:

- Sensing and monitoring buildings and analysing energy consumption in various climates to characterize building energy envelop.
- Develop sustainable and affordable building material solutions, including but not limited to cooling methods and lighting, with alternate and regionally available material solutions.
- Other topics jointly identified by CEFIPRA and Saint Gobain Research India Ltd. from time to time.

As a part of this 5 year program, Saint-Gobain Research India (SGRI) will launch Saint Gobain Post-Doctoral Fellowship in India to fund 2-3 French scientists to support their research in premier Indian research institutes, in the area of interest to Saint Gobain. Funding mechanisms will be decided jointly by SGRI and CEFIPRA. ●

TDB-OSEO join hands to achieve common goals

Mission of OSEO (an institution under the Ministry for Economy, Finance & Industry and, Ministry for Higher Education & Research, Govt. of France) is to provide assistance and financial support to French SMEs and VSEs in the most decisive phases of their life cycle : start up, innovation, development, business transfer / buy out. By sharing the risk, it facilitates the access of SMEs to financing by banking partners and equity capital investors.

Technology Development Board (set up by Govt. of India under its Department of Science and Technology) aims at accelerating the development and commercialisation of indigenous technology, or adapting imported technology for wider domestic applications, in India.

Given the similar mandates of OSEO and TDB (for supporting and facilitating the growth of companies through the development of innovative and competitive products) and emphasis on collaborative R&D by Indian and French entities as a component of bilateral cooperation between India and France, OSEO and TDB have entered into a Memorandum of Understanding to promote joint activities in S&T domain. The various components of envisaged initiative are:

- Information exchange to promote familiarity with knowledge of innovation systems.
- Facilitation of interaction between individuals, companies, organizations and institutions in the S&T domain, through participation in events and other means.
- Funding of collaborative innovation projects through coordinated, though independent, mechanisms to promote development of new technologies, processes, products or services.
- To study the feasibility of Coordinated Financial Instruments which facilitate the growth of India and French companies. ●

Forthcoming Events

- Workshop on **Challenges in overcoming complexity, from big data to cyber-physical systems** | 4 - 5th April 2013, New Delhi, India
- Seminar on **Recent Trends in Proteomics** | April 6-8, 2013 | Indian Institute of Science, Bangalore, India | Contact Person : Prof. K Somasundaram | [E-mail : kumaravelsomasundaram@yahoo.com](mailto:kumaravelsomasundaram@yahoo.com)
- Indo-French School on **Materials for Future** | April 15-19, 2013 | University of Poitiers, Poitiers, France | Contact Person: Celine Gerard | [E-mail : celine.gerard@cncs.pprime.fr](mailto:celine.gerard@cncs.pprime.fr)



Jules A. Hoffmann (born 2 August 1941) is a research director and member of the board of administrators of the National Center of Scientific Research (CNRS) in Strasbourg, France. He received 2011 Nobel Prize in Medicine (together with Bruce Beutler) for "their discoveries concerning the activation of innate immunity."

Dr. Hoffmann is a member of the German Academy of Sciences Leopoldina, the French Academy of Sciences, the Academia Europaea, the European Molecular Biology Organization (EMBO), the United States National Academy of Sciences, the American Academy of Arts and Sciences and the Russian Academy of Sciences.

On his recently concluded visit to India Dr. Hoffmann spoke with CEFIPRA and shared his views on various issues pertinent to current S&T scenario in India and the world.

CEFIPRA : This is your second visit to India. What were the impressions that you had after the first visit and what is the difference, if any, you notice now?

Prof. Hoffman : I noticed a remarkable development of the research facilities, which appear excellent today. I also was impressed by the quality of the students and post-docs and the level of our discussions – they are obviously well trained and motivated.

CEFIPRA : What do you feel about the role of organizations such as CEFIPRA in fostering International collaborations in S&T?

Prof. Hoffman : To judge from my contacts over the week of my visit, I understand that CEFIPRA is very active in fostering contacts between Indian and French scientists. I also recognize that CEFIPRA is very professional and respected. Overall, I believe that the roles played by such organizations are absolutely required for scientists to develop their interactions in appropriate conditions.

CEFIPRA : What are the larger implications of your work on the Toll genes for human health? How soon can they be realized?

Prof. Hoffman : I would argue that our contribution to innate immunity went beyond that special group of receptors. Anyway, the novel understanding of the roles of innate immunity (a long neglected field of research) resulting from the interactions of scientists working on insect and mammalian systems, has highlighted the dialogue between innate and adaptive immunity, and has opened new perspectives in basic and applied research on vaccination (adjuvants), allergy, autoimmunity, inflammation, infection and immunotherapy.

CEFIPRA : Did the Nobel Prize come as a surprise to you or were you expecting it?

Prof. Hoffman : I did not expect it.

CEFIPRA : France is deep into research and development in the area of infectious diseases, which are of great relevance in the Indian context. What is your advice on

how India & France could work together for maximizing the benefits?

Prof. Hoffman : I think the present trend of interactions is very positive. Exchange of scientists, particularly at the post-doctoral level, and reciprocal conferences of senior Indian and French scientists, will certainly be of interest to delineate areas of collaborations where each side will provide a specific "plus" – the process has to be selective and not all aspects in this vast field can be covered, even if the populations of India and France together represent nearly one fourth of humanity today (smiles).

CEFIPRA : How does one recognize and recruit good students to a PhD programme? What qualities are you looking for in such a student?

Prof. Hoffman : Above all, a strong motivation, a good training and a capacity to clearly express ideas and questions.

CEFIPRA : You have now interacted with a cross section of scientists, researchers and students from five cities across India. What are your impressions?

Prof. Hoffman : Although CEFIPRA did an excellent job in organizing my visits, in each city the time was too short for me to gain an in-depth impression – I loved the interactions both with the students, whom I found very keen in their questioning, and the staff scientists who were of high international standards. More time would have allowed, of course, for more specific discussions.

CEFIPRA : What is the secret formula for winning a Nobel in science? Why hasn't an Indian scientist won it yet?

Prof. Hoffman : There is no secret formula, I am afraid.

CEFIPRA : What is your message to young people in India desirous of choosing science as a career option?

Prof. Hoffman : I would strongly encourage young people to choose science as a career : this is a remarkably interesting period in science with spectacular progress being made in all fields namely in life sciences. The development of novel tools now allows to address questions in a way unthinkable when I started my career. ●

Seminar on
NEW VISTAS IN INDIAN AEROSPACE AND DEFENCE
 5th February 2013 – Bangalore

A seminar was organized jointly with SAE INDIA and IFCCI on “New Vistas in Indian Aerospace & Defence” ahead of AERO-India at Bangalore. Five French experts from the Systematic Cluster in Paris had been invited for the meeting.

This strategic level discussion program explored the way forward for the A&D Industry and aimed to seek solutions to the various issues and challenges faced by the industry. The discussion sessions provided a platform to foster honest debates on the current scenario in the Industry. The panelists responded to the issues faced by the visiting delegates creating an interactive environment.

Each panel consisted of members representing various elements of the industry. The representatives ranged from the big players in the industry to the MSMEs, the Industry Think Tanks (KPMG, PWC) etc. Each panel was headed by a panel chair whose responsibility was to direct the discussions in the direction of obtaining answers to a few important questions floating around in the industry. The



program concluded with a ‘Plan of Action’ session laying down the road-map of activities addressing the issues of the industry by few key industry development organisations. ●



**SPECIAL CALL FOR INDUSTRIAL RESEARCH PROPOSALS
 IN THE DOMAINS OF CATALYSIS, BIOTECHNOLOGY,
 DIAGNOSTICS AND ENGINEERING**

CEFIPRA is a bilateral Centre established by Governments of India and France to promote Scientific and Industrial cooperation between the two countries. CEFIPRA has taken initiative to finance collaborative research projects involving academic and industrial partners. The goal is translation of R&D into commercial processes/products to improve competitiveness of the industry involved.

For industrial research projects the following are necessary

- The proposal must be industry centric, formulated by the industry with a focus on the industry priorities
- An industry from France or India and a research institution from the other country must be involved. Partnerships with more than one industry or one research institution are also possible.

The proposals may address

- a) Development of process, product or design/ improvement of an existing process or product leading to competitive advantage for the industry
- b) Translate R&D lead into commercial product(s)
- c) Joint R&D development for industrial application

How to apply

- Formulate the problem you wish to address
- Identify partners in India and France
- Send a 2-3 page concept proposal describing objectives, methodology, expected outcome, role of partners and financial implications to the IFCPAR.
- The Industrial Research Committee, comprising experts from India and France, will examine the proposal and advise the partners on preparing a detailed proposal.

Deadline : 15th April, 2013 (for the 2-3 page write-up)

For further information please contact :
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Seminar on
SMART SYSTEMS INTEGRATION BASED ON MNT FOR HARSH ENVIRONMENTS
 Mumbai, 5 – 7th February 2013

A research seminar on “Smart Systems Integration based on MNT for Harsh Environments” was held at Mumbai. The seminar was initiated by Astrium Space Transportation (Dr. Coumar Oudea) and organized by CEFIPRA with the help of team from IIT Bombay and a significant involvement of Prof. Ramgopal Rao and Dr. Nitin Kale, CTO of NanoSinoff Technologies.

During the deliberations spread over three days, several points of common interest were found between the various stake-holders of both countries. These included:

1. Sensors: high temperature, pressure, gas detection, vibration, water quality, flows, accelerometers, gyroscopes, organic sensors (biochemical sensing)
2. Integration of components and sub-systems in a complex system
3. Packaging issues

During the seminar, Indian and French industrial actors articulated their needs in the domain of micro and nano technologies. These included:

1. MEMS for high temperature and pressure (Aerospace – Dr. Coumar Oudea, Astrium Space Transportation, France; Energy Industry – Dr. R. Sonde, Thermax Ltd, India)
2. High reliable technology (Aerospace – Dr. Coumar Oudea, Astrium Space Transportation, France, Dr. Francis Presseccq, French Space Agency (CNES), France)
3. Developing strategies with other sectors to cross the gap of the Valley of Death (Aerospace – Dr. Coumar Oudea, Astrium Space Transportation, and France)
3. Nano coating for protection against corrosion (Oil and Gas Production Industry – Dr Anil Bhardwaj, Oil & Natural Gas Commission Ltd, India; Petrochemical Industry – Dr. P. Uppara, Reliance Ltd, India)
4. Biochemical sensors/water quality sensors (Energy and Water Industry – Dr. R. Sonde, Thermax Ltd, India)

5. Gas detection sensors (Petrochemical Industry – Dr. P. Uppara, Reliance Ltd, India, Astrium ST, France)

The industrial needs could find some answers in the presentations from the Indian and French academic research institutions. During the concluding session, the participants from both countries identified several project ideas based on common interests and needs. These included:

1. Project on RF MEMS. IIT Kharagpur (Prof. T K Bhattacharya), IIT Delhi, Astrium (Dr. S. Fargeot), Xlim Lab (Prof. Pierre Blondy)
2. Development of pre-concentrator systems: (microheater, electronics, packaging, surface multiplier etc.): IIT Bombay (Prof. V. R. Rao), Nanosniff (Dr. Nitin Kale), LIRMM (Prof. Pascal Nouet), Astrium (Dr. Coumar Oudea)
3. Gas Detection Sensors: IIT Bombay (Prof. V. R. Rao), Nanosniff (Dr. Nitin Kale), IISc Bangalore (Prof. Navakanta Bhat), LIRMM (Prof. Pascal Nouet), Astrium ST (Dr. Coumar Oudea)
4. Autonomous Out gazing Characterization. IIT Bombay (Prof. V. R. Rao), Nanosniff (Dr. Nitin Kale), LIRMM (Prof. Pascal Nouet), CNES (Dr. Francis Presseccq), Astrium (Dr. Coumar Oudea)
5. Hall sensor for high temperature applications. L2C (Prof. Sylvie Contreras), Astrium (Dr. Coumar Oudea), IISc Bangalore (Prof. Navakanta Bhat)
6. Micro Inertial Measurement Unit (μIMU): FEMTO Lab (Dr. Manuel Collet), LIRMM (Prof. Pascal Nouet), Astrium ST (Dr. Coumar Oudea), Tronics (S. Renard), IISc Bangalore (Prof. Navakanta Bhat), IIT Delhi (Prof. Manish Sharma), IIT Madras (Prof. Enakshi Bhattacharya)
7. Reliability (PoF – Physics of Failure): IIT Madras (Prof. Enakshi Bhattacharya), LIRMM (Prof. Pascal Nouet)
8. Fourier transform spectroscopy. CEA/LETI (Jean-Philippe Polizzi), IIT Madras (Prof. Enakshi Bhattacharya), Tronics (S. Renard)



RAMAN-CHARPAK FELLOWSHIPS

Call for Applications

Recognising the importance of the mobility of students between two countries as a pillar of S&T Cooperation, Governments of India and France have launched the “Raman – Charpak Fellowship” during the recent state visit of the Honourable President of France to India in February 2013.

The Fellowship

The fellowship programme is in honour of Sir C.V. Raman and Prof. Georges Charpak, the two great Nobel laureates in Physics from India and France whose scientific contribution have greatly influenced the advancement of science. The programme aims at further strengthening Indo-French scientific cooperation through close collaboration between Indian and French laboratories, by supporting the mobility of highly qualified PhD students registered in an Indian or French research institute / university, to offer them an excellent opportunity to carry out a part of their doctoral research work in France / India.

Applications from PhD students of India and France in various areas of Science & Technology for awarding the Raman-Charpak Fellowship 2013. For more information about Application Procedure and other details visit www.cefipra.org.

Last date for the receipt of applications
31 May 2013

ESONN 2013 SESSION

Call for Applications

CEFIPRA has joined hands with European School on Nanosciences and Nanotechnologies (ESONN) in Grenoble, France, to support the participation of 5 Indian doctoral students in the ESONN training programme - Session 2013 (August 25th - September 14th, 2013). The expenses related to the participation of these students will be entirely borne by CEFIPRA.

All the lectures and practicals are given IN ENGLISH, at the Maison des Magistères, 25 rue des Martyrs, Grenoble, France.

ESONN is a three-week course and the details of which is available on <http://esonn.fr/>. The programme emphasizes the role of laboratory courses (half of the programme is devoted to practical work) and structured to highlight the fundamental and technological advances in Quantum Nanoelectronics (session A) and at the interface between Physics and Biology (session B).

For more information about Application Procedure and other details visit www.cefipra.org. Last date for receipt of completed applications is April 15th 2013.

Last date for the receipt of applications
15 April 2013

Indo-French Centre for the Promotion of Advanced Research (IFCPAR) is a model for international collaborative research in advanced areas of science and technology. The centre was established in 1987 with support from Department of Science & Technology, Government of India and the Ministry of Foreign Affairs, Government of France.



For further information please contact:
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