

ENSEMBLE

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



Women in Science; Science is not a 'Boy's Club' only



Dear Readers,

I am pleased to present this issue of Ensemble focusing on “Women in Science”. India and France have shared strong bonds for encouraging women scientist for several decades. Since its inception, CEFIPRA has been supporting projects by bringing together women scientist from both the countries to work towards common goals. As a part of 30 years celebration of CEFIPRA, an Indo-French seminar on “Women in Science” was organized during 24th-25th September, 2018 at CNRS headquarters in Paris. The seminar highlighted the scientific contribution and achievements of women scientist working in Indo-French collaborative projects. Earlier in 2015, a seminar on “Women in Science” was also organized during 3rd-5th February, 2015 at Bangalore, India.

It is my last issue of Ensemble, as Editor. I shall be relinquishing my position of Director, IFCPAR/CEFIPRA and will be joining back to my parent organization, Indian Council of Medical Research (ICMR), New Delhi in October, 2018.

During my full tenure of three years, I had many opportunities to interact with several senior policy makers, officials, scientists, researchers, students and industry representatives from India and France, who were very kind & supportive. They provided me immense encouragement, professional benefits & exposure.

With the experience, I gained in CEFIPRA, I am sure it will be helpful in my future endeavours. Let me acknowledge the support, I received from the dedicated Team CEFIPRA. Once again, my sincere gratitude and warm regards to both Co-Chairs, members of Governing Body (GB), Scientific Council (SC), Industrial Research Committee (IRC) & various Expert Committees as well as the Officials of Governments of India and France for their excellent support and guidance in fulfilling the mandate of the Centre. The success of CEFIPRA, we owe to each of you, your commitment to this unique bi-national Centre. I request one and all to continue all support to Team CEFIPRA and to its new Leadership. I too wish the new Director of CEFIPRA, the great success.

Thank you for your continued interest and support!!

Dr. Mukesh Kumar
Director, CEFIPRA

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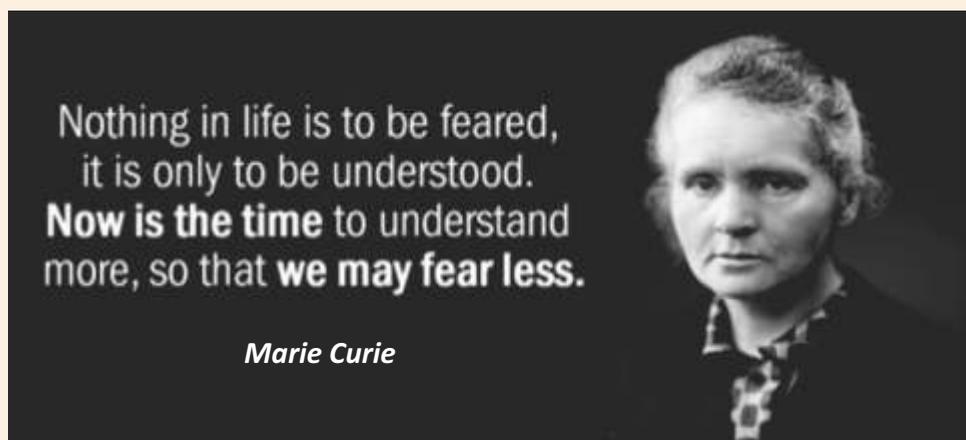
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Update

Women in Science



Since ages, India and France have shared same cultural values. In India, Bharat Mata (Mother India) portrays unity, peace, and love in the country and in France, Marianne is a national symbol of the French Republic, a personification of liberty and reason and a portrayal of the Goddess of Liberty. Respect for women has always been well recognized in both the countries. The modern era of globalization and expeditious technological development has

changed people's lives drastically. The fields of Science, Technology and Innovation (ST&I) have extremely important role in today's contemporary society for its growth. Both men and women are participating to revolutionize the world. Women have struggled for centuries and have come a long way for increasing their percentage in the scientific workforce but statistically their numbers are comparatively less than men. Women face several social pressures which has been passionately overcome over the years. According to UNESCO's Institute for Statistics (UIS) data, less than 30% of the world's researchers are women showing the extent to which these women work in the public, private, academic sectors and different fields of research¹. Women have been exceeding in scientific careers and according to statistics of 2017, forty eight women have been awarded Noble prizes². Several effective initiatives by governmental/non-governmental organizations, funders, policy makers and support systems to tackle various issues related to women's participation in science are advancing constantly. Today, women have started rejoicing their triumph and are moving ahead to achieve proficiency.

Prior to independence period of India, women participation in science was less but now the situation has improved. Presently, 25-30% women PhDs are in major subjects like Life Sciences and Chemistry³. Out of which, 15-20% women are working as faculties. In India, there are 61,050 women employed in Research and Development (R&D) establishments, which is 15.6% of the total manpower employed in the country⁴. The government has announced 2010-2020 as the 'Decade of Innovation' which needs equal participation of women in developmental process and Science, Technology and Innovation (ST&I) for their contribution to make India "Innovation Super Power"⁵.

Reports have stated that women Director of science institutes are rare, and as Head of departments in universities and research institutes are less than even 15%³. In all, women's participation in governance structures is fairly limited. With the aim to tackle such complex gender obstacles, Government of India (GoI) has supported many new initiatives. The Department of Science & Technology (DST), GoI has taken initiatives such as KIRAN (Knowledge, Involvement, Research, Advancement through Nurturing), CURIE (Consolidation of University Research for Innovation and Excellence) in Women Universities, INSPIRE (Innovation of Science Pursuit for Inspire Research), WEDPs (Women Entrepreneurship Development Programmes), Introduction of Mobility Schemes and Internship under Women Fellowship Scheme (WOS-A, WOS-B, WOS-C). The Department of Biotechnology (DBT), GoI has taken initiatives such as: Bio-CARe (Biotechnology Career Advancement and Reorientation) Programme and Biotechnology based societal programmes for women. Moreover, Department of Scientific & Industrial Research (DSIR), GoI has taken strong efforts for women upliftment through programmes such as TDUPW (Technology Development and Utilization Programme for Women) and there are many more. A few initiatives in this direction such as: organizing informal programmes for girls and women, encouraging Leadership/Mentorship Programmes and affordable education for girls in urban and rural settings are areas that have to be worked upon. Furthermore, proper monitoring, information and

¹ <http://uis.unesco.org/en/topic/women-science>

² https://www.nobelprize.org/nobel_prizes/lists

³ https://www.ias.ac.in/public/Resources/Initiatives/Women_in_Science/AASSA_India.pdf

⁴ <http://www.nstms-dst.org/Research-and-Development-Statistics-2007-08.pdf>

⁵ <http://www.ictconnect.in/Tech/2010-2020-A-Decade-of-Innovations.html>

creating necessary work conditions should improve the situation in this field. Thus, the growth of knowledge during the last decade, the gains made by institutional practices and the results of favorable interaction between women movements & scientific and technological institutions have brought about persistent changes.

In France, the French National Centre for Scientific Research (CNRS) is the largest public research institution, which covers natural and social sciences. CNRS has significantly supported women in scientific research and has set an example to other countries as well.⁶ In 2001, CNRS became the first public research institution in France to establish a unit dedicated to evaluating and promoting gender equality among its employees. According to the latest CNRS report, in 2015, 43% of all staff members-which include permanent researchers, PhD students, Post-Docs were women. The higher the professional status, the fewer the women there were to be found: 65.1% of technicians were women, as compared with 45.4% of research engineers and 34.5% of researchers (which includes both trainees and more senior permanent researchers). Among permanent researchers, women accounted for 37.7% of lab members, 28.2% of team leaders, and just 18.8% of unit directors. There is a slight deviation from this trend at the highest levels of leadership: One-third of the deputy scientific directors of CNRS institutes were women. The L'Oréal-UNESCO French Fellowship is the most renowned, wherein the partners are French National Commission for UNESCO and French Academy of Sciences. The L'Oréal-UNESCO for Women in Science International Awards programme identifies and supports accomplished women researchers. Each year, five laureates are recognized for their contributions to the advancement of science, in Life or Physical Sciences in alternate years.

Women comprise the most important part of the scientific community for both India and France. Their significant contributions in terms of publications and patents have always been appreciated. Policy makers have recognized their contributions over the years. CEFIPRA provides equal opportunities to men and women researchers. However, it has been observed that as compared to the national statistic (grants given to women), the involvement of women scientist is more under CEFIPRA's programmes. CEFIPRA has encouraged women scientist in various committees. Earlier CEFIPRA has also been served by a woman Director during April, 2010-July, 2012. Presently, there are one French woman as Co-Chair of Governing Body (GB) of CEFIPRA and four women members in Scientific Council (SC) and Industrial Research Committee (IRC).

A lot of woman scientists/researchers are supported under CEFIPRA's Core activities such as Collaborative Scientific Research Programme (CSR), Industry Academia Research & Development (IARDP) as well as in seminars and workshops. Women scientist have also participated in Targeted Programmes such as DST-ANR, DST-INRA, DST-Inria-CNRS and Indo-French Water Network (IFWN). Furthermore, there are several Innovation programmes through PPP mode like CEFIPRA-SGRI, BIRAC-CEFIPRA-French Embassy, BIRAC-CEFIPRA-Bpifrance and TDB-CEFIPRA-Bpifrance where women scientist are involved. Out of 714 total participants of Indian and French sides (as PIs, Co-PIs, PhDs, Post-Docs etc.), 198 are women, contributing to 28% of the total scientists.

Under CSR, 31 Indian and 35 French women PIs have been involved in 201 projects during the last ten years. Out of total 14 projects under IADRP, 12 women participated from India while 5 women participated from France. Under DST-Inria-CNRS, six projects have been completed involving the participation of two Indian women PIs. Since inception, BIRAC-CEFIPRA-French Embassy Programme, two projects (both of which have woman PIs from India and France) have been completed. Addressing the concerns of women in science, CEFIPRA has earlier played a proactive role in organizing a seminar on "Women in Science" during 3rd-5th February, 2015 at Bangalore, India.

Recently to further motivate woman scientists as well as to bridge the gender gap, CEFIPRA had organized the 2nd Indo-French seminar on "Women in Science" during 24th-25th September, 2018 at CNRS headquarters, Paris, France. During the inaugural session, Dr. Antoine Petit, President, CNRS welcomed the participants. Mme. Laurence AUER, French Co-Chair of CEFIPRA, Ministère de l'Europe et des affaires étrangères, Paris, Govt. of France, delivered the inaugural speech. During the speech, Mme. Auer appreciated the efforts taken by CEFIPRA in organizing this seminar and reminded the participants that participation and empowerment of women in science is significantly improved during

⁶ Action and data for women in science: A French example by Elisabeth Pain (2017)

the last two decades. The scientific world may recognize it and take further steps to attract more and more women towards science and increase their mobility components also. Mr. Ignaci Arulanandu, First Secretary (RT, Edu & CA), Indian Embassy, Paris, France also addressed the gathering on behalf of H.E. the Ambassador of India in France. During the occasion, Mme. Auer, French Co-chair, CEFIPRA also released a CEFIPRA's book on "Women in Science" in programmes supported by CEFIPRA. A Curtain Raiser of the book for a period from 1st Jan., 2008 to 31st Dec., 2017 was presented by Director, CEFIPRA. In his address, he highlighted the evidence based facts and figures emerged from various programmes of CEFIPRA during the last ten years. The vote of thanks was also delivered by him. Next day, Director, CEFIPRA disseminated information on various activities & programmes of CEFIPRA. Two day seminar was attended by approximately 50 participants. The event included three panel discussions on "Nature and extent of gender inequality in scientific profession", "How to attract young women to scientific careers?" and "Gender equality plans and policies" in addition to plenary talks by eminent women scientist. There were keynote speakers also from different domains of science. The experiences of many women scientist were shared and discussed in depth by the three generations of scientists, seniors, young scientists and the PhD/Post-Doc students. The PhD, Post-Doc students and young scientists of CEFIPRA made research poster presentations during the seminar.



"Women in Science" Seminar, 24th-25th September, 2018 at Paris

Dr. Virginie Molle, French PI of CSRP Project (April, 2015-April, 2018)***“Aiming to fulfill a scientist career to fight bacterial infectious diseases while being a Woman and a Mother”******Virginie Molle***

Virginie Molle, PI, CSRP (April, 2015-April 2018)

My name is Virginie Molle. I am 44 years old French, and the mother of three young children of 17, 13 and 10. I am also a scientist. I am currently a Research Director from the "Centre National de la Recherche Scientifique" (CNRS) at Montpellier University in France and pursuing a scientific career that allows me to live the life I enjoy in participating in exciting discoveries that I hope will positively impact our community.

In 2010, my expertise and achievements in the field of phosphorylation-mediated regulatory pathways in pathogenic bacteria granted me the French National Startup Grant to develop my independent research. My team "Post-translational regulation of proteins and bacterial pathogenicity" was born as well as my three children. It has its importance as having children can be a real burden for women

aiming for an academic career in research because the years that critically determine my career overlapped with childbirth. Personally, I chose to have one child during my first post-doc and two more later during my junior position. The more women show they can have a brilliant career and a happy family, the more young women will believe it is doable and the unconscious biases will become weaker. That has always been a day to day motivation despite the obstacles.

Therefore, I am really honored to have been supported by the CEFIPRA organization over last years and to be part of this special issue for the "Ensemble" newsletter to highlight the accomplishments of women investigators in science and encourage us, despite obstacles, to successfully pursue fulfilling our research careers.

A molecular microbiologist by formation, I approached the study of bacterial infections through my different collaborations and especially my fruitful and enjoyable collaboration with my Indian colleagues, Prof. Vinay Nandicoori (National Institute of Immunology, New Delhi) and Yogendra Singh (Delhi University), leading us to be allowed a CEFIPRA research grant to study the deadly disease that is Tuberculosis Bacillus (TB).

In fact, TB causes about eight million new infections each year and up to three million deaths. The disease is spread from one person to another, when someone with TB coughs or sneezes and people nearby breathe in the bacteria and become infected. Already one of the leading causes of death world-wide, the number of deaths from tuberculosis continues to increase as new, antibiotic resistant strains and co-infections linked to HIV emerge. A third of the world population has been exposed to *Mycobacterium tuberculosis (Mtb)*, the bacteria that cause TB. Burden of total tuberculosis cases are unequally divided in the world, with India and China having the highest number, accounting for around 40% of cases. Its complex physiology and ability to survive in hostile environments, coupled to the serious trend of rise in multidrug-resistant (MDR) and extensively drug-resistant (XDR) tuberculosis cases, has necessitated the renewal of efforts to understand the molecular basis of its pathogenesis. Consequently, new drugs are urgently required to treat active and latent TB.

However, despite its prevalence and long history, a lot remains to be discovered about the survival of the pathogen in its human host. Thus, with my Indian colleagues and thanks to CEFIPRA support, our research led us to discover a crucial

protein, a mycobacterial phosphatase named PstP, involved in causing the disease, and we hope that our studies would lead to new therapies for controlling tuberculosis bacterial infections.

Our project allowed us to set up the essential pipelines for the study of the mycobacterial phosphatase PstP. The innovative aspect of our project resides in the study of the role of this phosphatase and its specific targets in the control of host-pathogen interactions, thus impacting the global human host response during infection. Our data demonstrated for the first time an important role for this virulence actor in establishing and maintaining infection, possibly via the modulation of cell division events. Moreover, mice infection experiments establish a definitive role for PstP in pathogen survival within the host. Depletion of PstP from established infections causes pathogen clearance, indicating that the continued presence of PstP is necessary for pathogen survival. Moreover, we were interested in identifying the targets this protein is able to bind once in the infected host cells. Therefore, 153 proteins were identified as PstP-interacting partners. We are currently in the process of validating some of the candidates in order to decipher the role of PstP in modulating their functionality during infection. Understanding all these processes in controlling host invasion and persistence represents a new promising approach to better understand essential processes of bacterial pathogenicity and it consequently provides many potential targets for the development of antibacterial drugs.

Moreover, we are also very enthusiastic to set-up and develop an innovative drug-screen based on our findings on the animal model zebrafish. We plan to place the animal model at the start, rather than the end, of the drug discovery process in order to circumvent high attrition rates that have plagued *in vitro* drug-screening over the past two decades due primarily to issues such as metabolic inactivation, failure to reach target, and off-target toxicity. We expect to lead to yet unexplored modes of host-pathogen interactions, and that a series of potential drug targets might evolve from our approaches.

New Member of Industrial Research Committee

CEFIPRA extends warm welcome to Mr. Daniel Vellou, Head of the Healthcare Department of the CEA-LETI (Laboratoire d'électronique et de technologie de l'information) in Grenoble, France to Industrial Research Committee (IRC) of CEFIPRA. Mr. Vellou joined the Technology transfer office of CEA in March, 2017. He graduated from ENSERG and began his career as a memory R&D design engineer with EFCIS, moving to analog ASICs product engineering before Thomson-CSF Semiconducteurs Spécifiques (TCS) as Head of AISC Libraries group. In 1994, he took the lead of the Microprocessor and Analog business unit with TCS, where he launched the FingerChip (TM) product family.



Mr. Daniel Vellou

B.C. Roy Award for Prof. V.S. Negi



Prof. V.S. Negi

CEFIPRA congratulates Dr. V. S. Negi, Head, Department of Clinical Immunology at Jawaharlal Institute of Postgraduate Medical Education & Research (JIPMER), Puducherry for being conferred with the prestigious Dr. B. C. Roy Award, 2017. He was awarded under the category "To recognize the best talents in encouraging the development of specialties in different branches of medicine". Dr. Negi is amongst the limited clinician-scientists of India who has made remarkable contribution as an innovator in all aspects of medical fields. A novel work and determination has resulted in the development of newer therapeutic modality of cell-based immunotherapy for immunological disorders. He has worked as a Principal Investigator in CEFIPRA's research project entitled "The Immuno-Psychiatry in South India Study (IPS): Immunogenetic and Immuno-phenotype Characterization of Major Psychoses" from May, 2014 till April, 2018. We wish him success for his future endeavors!

Delhi Dialogue X



Delhi Dialogue X
(Photo Credit : MEA Photogallery)

The 10th edition of Delhi Dialogue (DD X) was held during 19th-20th July, 2018 at New Delhi. Delhi Dialogue is a premier annual track 1.5 event to discuss politico-security, economic and socio-cultural engagement between India and Association of Southeast Asian Nations (ASEAN). It was hosted by Union External Affairs Minister Smt. Sushma Swaraj and various political leaders, policy makers, senior diplomats, business leaders and academicians from India and ASEAN Member States.

The theme of this edition was “Strengthening India-ASEAN Maritime Cooperation”. The event was organized by Research and Information System (RIS) for Developing Countries. The two day event comprised of six plenary and four parallel sessions. The ministerial session was held on 19th July, 2018 by Union External Affairs Minister Smt. Sushma Swaraj wherein she delivered the keynote address. Dr. Mukesh Kumar, Director CEFIPRA attended the inaugural session on first day.

Science, Technology & Innovation Policy (STIP) Forum Lecture Series

STIP - Tenth Lecture



STIP Forum Lecture Series-10th Lecture

The tenth lecture under Science, Technology and Innovation Policy (STIP) Forum Lecture Series (a collaborative initiative of CEFIPRA, RIS, TERI, CSE, Vigyan Prasar and IHC) was organized by CEFIPRA on 13th July, 2018 at India Habitat Centre (IHC), New Delhi. The lecture was delivered by renowned scientist Prof. Ashutosh Sharma, Secretary, DST, GoI and Indian Co-Chair of CEFIPRA's Governing Body (GB) on “Future of Science, Technology & Innovation” at IHC, New Delhi. The lecture was chaired by Dr. V.K. Saraswat, Member, NITI Aayog, GoI. Dr. Mukesh Kumar, Director, CEFIPRA welcomed the dignitaries.

During his lecture, Prof. Ashutosh Sharma highlighted on the future of Science and Technology and Innovation (ST&I). He said that the talk is completely conceptual. He mentioned that the prediction of future is difficult and probably it is difficult to judge. In the 20th century, science was discussed as three important things; atom, computer and the gene but today communication, information and decision making are the important aspects of artificial intelligence and development of artificial machines. He was very affirmative about the rise of intelligent machine in future that could not be just cyber-physical but cyber-physical-biological systems. The real or physical world is linked to the virtual world of information processing through communication networks, computing, sensors and actuators, ultimate result being decision making and action thereon. The research in robotics, artificial intelligence, machine learning,

digital manufacturing, big data analysis and quantum communication will be supported by the new light and showdown of S & T. However, it will bring new sustainable challenges linked to education, resources and climate change.

Talking about a futuristic and digital replica of one's personality that can live on and adapt to new knowledge and thoughts after one's death will be “Cyber Twin” – that can be possible in future with the advent of artificial intelligence, machine learning, deep learning and all such disruptive technologies. However, the rise of disruptive technologies like this will also throw up ethical dilemmas.

He further said that R&D should be driven by the Sustainable Development Goals (SDGs) framework since research inputs are critical for achieving each of the goals. For this, Prof. Sharma said, “R&D will have to shift from the present approach of being tool-centric or discipline-centric to being problem-centric.” This, in turn, will require inter and multi-disciplinary collaboration, and also confluence between sciences and social sciences. Lecture was followed by many rounds of interesting questions and queries from the members of audience, which were answered by the Speaker. Dr. P.K. Anand, Visiting Fellow, RIS, New Delhi extended the vote of thanks.

STIP- Twelfth Lecture



STIP Forum Lecture Series-12th Lecture

The twelfth lecture under Science, Technology and Innovation Policy (STIP) Forum Lecture Series was organized by CEFIPRA on 10th September, 2018 at India Habitat Centre (IHC), New Delhi. The lecture was delivered by Prof. Balram Bhargava, Secretary, Department of Health Research (DHR), Ministry of Health and Family Welfare, GoI and Director-General, Indian Council of Medical Research (ICMR) on “Frugal Innovation for Health Care” at IHC, New Delhi. The lecture was chaired by Dr. Rajiv Kumar, Vice Chairman, NITI Aayog, GoI. Dr. Mukesh Kumar, Director, CEFIPRA welcomed the dignitaries.

Talking about value conscious innovation, Prof. Balram Bhargava, started his talk with Gandhian innovation after India's independence. He further discussed about Indian strengths and highlighted the magnificent work done in various fields like telecom sector green and white revolution in agriculture and development of generic drugs in pharmacy & medicine. In the areas such as emergency & affordable health care system, researchers/scientists and policy makers need to address the problem. Furthermore, understanding the health care expenditures, 40 million people fall back below the poverty line. He was affirmative that India's new scheme for masses like National Health Protection Mission as **Ayushman Bharat** targeting poor, deprived rural families and urban workers families, which were developed on the basis of socialist model may bring about some solutions. He addressed the concern regarding the shortage of appropriate medical devices. He stressed that India needs another revolution involving low cost medical devices which will be made in India and marketed in and around the world. In the era of global networking innovation, ideas may be developed in any part of the world and manufactured elsewhere. Thus collaborative research may be beneficial in this regard.

He further highlighted the different approaches like Gandhian versus Edisonian innovation. In India, innovation paradigm is need based with affordability, availability and accessibility. We should focus on people and not just on shareholders, wealth and profit. He also shared some of the successful examples from School of International Bio-design (SiB) which is a network of AIIMS, IIT-D, BCIL and international partners and is working towards identifying the unmet healthcare needs and developing solutions in India through the promotion of fugal medical devices for the common man.

Bastille Day -2018



Bastille Day -2018

To mark the celebrations on French National Day, 2018 (Bastille Day), the reception was hosted by H. E. Mr. Alexandre Ziegler, Ambassador of France in India on 14th July, 2018 at his residence in New Delhi. He accorded warm welcome to all the guests. He emphasized that this republican celebration is an occasion for uniting us over values that bring us together. He focused on reaffirming the Indo-French commitment to combat climate change along with French companies contribution in India's major transformation with regard to investment and innovation in sectors such as renewable energy, eco-friendly transport and sustainable city. Dr. Mukesh Kumar, Director, CEFIPRA also attended the reception.

Panel discussion and award ceremony for DST Lockheed Martin-Tata Trust

The panel discussion and award ceremony for DST Lockheed Martin-Tata Trust was held on 2nd August, 2018 at New Delhi. The aim of this discussion was that innovations have the potential to bring about a significant change and help engineer a better tomorrow. Mr. Ramesh Abhishek, Secretary, Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce & Industry, Govt. of India in the Panel discussion on “Innovation & Start-up Ecosystem in India” at the Awards Ceremony, 2018 conveyed the start-ups should constantly engage with government and solve problems together. Dr. Mukesh Kumar, Director, CEFIPRA attended the event.

Raman Charpak Fellowship-2018, Selection Committee Meetings



Preliminary Selection



Final Selection

Selection Committee meeting of RCF-2018

Raman-Charpak Fellowship aims to facilitate the exchange of doctoral students between India and France in order to broaden the scope and depth of future engagements in ST&I. A Call was launched on 1st April, 2018 for which 229 applications were received. In view of the lesser number of the applications received from France; the deadline was extended upto 30th June, 2018. The meetings for preliminary selection of candidates for the Raman-Charpak Fellowship-2018 were held on 31st July, 2018 and 3rd August, 2018 at CEFIPRA office, New Delhi. The Committee had shortlisted 67 Indian candidates for consideration in the final selection meeting. The Expert Committee meeting for final selection of pre-selected candidates was held on 5th September, 2018. These meetings were attended by area experts from different institutes/organizations, representatives of the granting agencies and officials of CEFIPRA. Director, CEFIPRA appreciated the cooperation and support received from Department of Science and Technology (DST), GoI & French Embassy in India for the Programme. CEFIPRA has also launched a dedicated Call for French Master's students on 1st August, 2018 with deadline as 31st October, 2018 as a proactive measure to attract more French students to India.

Review Meeting on French version of documentary film of CEFIPRA

The documentary film (English version) on “CEFIPRA: Journey of 30 years” was released during the 31st Governing Body (GB) meeting held on 23rd March, 2018 at New Delhi. During the meeting the GB members suggested to prepare the documentary film with French titles for circulation among French scientists and French Ministries for better reach out. Accordingly, the producer of the film, M/S Credecence Medias prepared the documentary with French version. The French script was vetted in the meeting organized by CEFIPRA by inviting two French nationals, Mme. Sarah BAKRY, Head Media Librarian, Alliance Française de Delhi and Dr. Srinivasa Kaveri, Director, CNRS office at New Delhi. Two experts immensely contributed to French script during the meeting held on 16th-18th August, 2018 at CEFIPRA office, New Delhi.

Attended meeting of Specialist Panel on Soldier Health & Drug Development

Defense Research and Development Organization (DRDO) supports the R&D through funding the research proposals to non DRDO establishments in the niche areas relevant to needs of defense forces. This is done with various Boards. Life Sciences Research Board (LSRB) is one of the Research Boards which covers research pertaining to Life Sciences. Director CEFIPRA was invited as Co-Chairman for the meeting of specialist panel on 17th August, 2018 to review the project proposals pertaining to Soldier's Health & Drug Development.

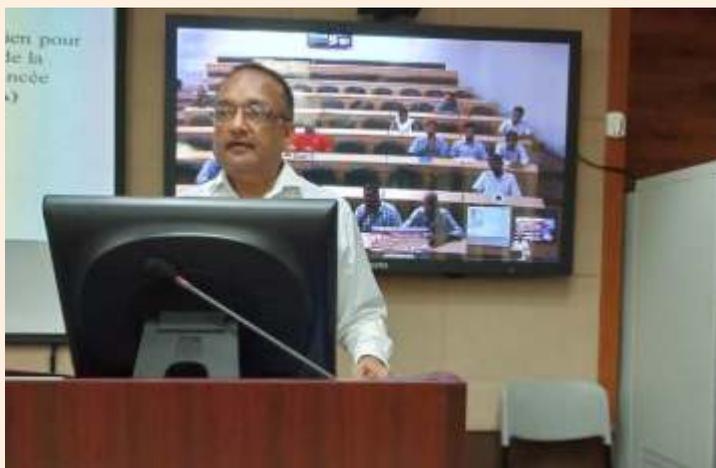
Meeting with H.E. the Indian Ambassador and DCM in Indian Embassy at Paris

Director, CEFIPRA had a meeting with H.E. the Ambassador of India in Paris Mr. Vinay Mohan Kwatra, on 28th September, 2018 at Indian Embassy in Paris. During the meeting, discussion was held to brief him on CEFIPRA's activities. He also met Deputy Chief of Mission (DCM), Mr. Ankan Banerjee and expressed his gratitude for the support received from the Indian Embassy. Mr. Banerjee earlier visited CEFIPRA Office in New Delhi on 20th August, 2018.



Meeting with Indian Ambassador and DCM at Indian Embassy in Paris

Guest Lecture and Institutional Visit at BITS, Goa



Guest Lecture and Institutional Visit at BITS, Goa

Birla Institute of Technology & Science (BITS), Pilani is a renowned group of institutes offering higher education in the fields of Science, Engineering, Pharmacy and Management. Dr. Mukesh Kumar, Director, CEFIPRA delivered a guest lecture on 30th August, 2018, organized by BITS, Pilani (Goa campus) on “Indo-French Centre for Promotion of Advanced Research IFCPAR/CEFIPRA: Activities and Funding opportunities”. The lecture was to disseminate information on programmes & activities of CEFIPRA and was transmitted at various locations of BITS national campuses like Pilani, Hyderabad & Goa as well as international branch campus of BITS Pilani at Dubai. The lecture was greatly appreciated by interested faculties, research scholars and students and attended by more than

100 participants. Dr. Mukesh Kumar, Director, CEFIPRA also visited a field unit of National Institute of Malaria Research (ICMR-NIMR), Goa on 27th August, 2018. During his visit, he interacted with local and international scientific staff regarding various programmes of CEFIPRA. This prestigious institute is involved in various international accredited research activities such as factors responsible for malaria outbreak and its evolution in South-East Asia etc.

B2B Summit for the Aeronautics and Aerospace Sector at Bengaluru



B2B Summit for the Aeronautics and Aerospace Sector at Bengaluru

Technology Development Board (TDB) and CEFIPRA along with Federation of Indian Chambers of Commerce & Industry (FICCI) organized the B2B (Business-to-Business) Summit on “Aeronautics and Defense Equipment Sector” on 14th September, 2018 at Bengaluru. The Summit had two thematic sessions covering topics on “Innovations and Technologies in Aerospace Input Supply” and “Future Technologies”. The discussions were followed by group activity and visit to Aerospace Equipment Industry. The event was organized to have an interactive meeting exploring business opportunities in aeronautics/ defense equipment manufacturing and technology transfer. Generation of new projects, build collaborations and file joint applications under TDB's

bilateral programme with Bpifrance was also another purpose for organizing this summit.

During this one day interactive event delegates were from aerospace/aeronautics industries, training institutes, Startups, SMEs, officials from Government. In the inaugural session, Mr. Anand Sudershan, Chairman, National Startup Committee, FICCI and Founder & Director, Sylvant Advisors welcomed the delegates. Dr. Bindu Dey, Secretary, TDB, Dept. of S&T, Ministry of Science and Technology, Government of India and Dr. Mukesh Kumar, Director, CEFIPRA addressed and highlighted the purpose & expectations from the B2B Summit. The keynote address was delivered by Dr. Bala K. Bharadvaj, Director, Boeing Research & Technology Center, Bangalore. He discussed the activities of Boeing in India and success stories of some small & medium Indian companies associated with Boeing India. The vote of thanks was delivered by Mr. Shaju Mangalam, Additional Director & Head – Karnataka State Council, FICCI.

There were two panel discussions on topics related to aerospace sector. A total of seven eminent speakers from aeronautics/aerospace industry delivered lectures on various aspects and challenges of the aerospace/aeronautics industry in India. The four speakers of the panel discussion on Innovations and Technologies in Aerospace Input Supply were Mr. Sharadhi Chandra Babu, COO and Head, Defence and Offsets, Axiscades Aerospace and Technologies Pvt. Ltd., Mr. Y. Chandra Shekhar, Head, Supply Chain, GE Aviation, Mr. Amit Banerjee, COO, Hampson Industries Pvt. Ltd. and Mr. Rayaprolu Venkata Bharhava Ramana, CEO, Maruthsakha Aerospace and Aviation Pvt. Ltd. In the next panel discussion on Future Technologies, three speakers delivered lectures were Mr. Damodaran Subramanian, MD, Safran Engineering Services India, Mr. Venkataramana Mantha, CEO, Assystem Technologies India and Mr. D. Krishna Mohan, Deputy Site Director, Moog India. Secretary, TDB delivered the lecture on “Funding Opportunities for Technology Ventures” and explained the details of availing funding from Technology Development Board for Industries. CEFIPRA had its identified table to further disseminate more information and clarify doubts to the visitors.

CEFIPRA's Session at B2B (Business-to-Business) Summit at Bengaluru



CEFIPRA's Session at B2B (Business-to-Business) Summit at Bengaluru

CEFIPRA's session was held in the afternoon of 14th September, 2018, at Business-to-Business Summit for dissemination of IARDP to Bangalore based Industries, Startups and SMEs. The event was planned as per the recommendations of last IRC meeting held in May, 2018 at Grenoble, France to disseminate information on industrial relevant programmes to industry clusters especially SMEs & Start-ups.

Dr. Mukesh Kumar, Director, CEFIPRA coordinated and delivered the welcome address with brief presentation on CEFIPRA's industries oriented programmes. Dr. Jayant Modak, CEFIPRA's IRC member also briefed the gathering about the objectives and mandate of IARDP and PPP programmes of CEFIPRA. He further provided details on the development of industrial proposals and the expectations from industries. Mr. Jerome BOVE, Attaché for Scientific & Academic Collaborations, French Embassy in Bengaluru presented his remarks about the CEFIPRA by quoting its 30 year old successful partnership which has already brought out several significant achievements. He further added that CEFIPRA was showcased during the 'Bonjour India' event & state visit of H.E. the President of France to India in March, 2018. The event was a grand success. A brief presentation was also made by CEFIPRA staff, Dr. Payal Prakash and Dr. Aparajita Das on IARDP (Industry Academia Research Development Programme) and TDB- CEFIPRA-Bpifrance Programme respectively. Director, CEFIPRA clarified all the queries of industries especially Startups for their eligibility criteria and funding opportunities from CEFIPRA to the participants during interactive Questions & Answers (Q&A) session.

Visit to Acharya & B.M Reddy College of Pharmacy, Bangalore



Visit to Acharya & B.M Reddy College of Pharmacy, Bangalore

Dr. Mukesh Kumar, Director, CEFIPRA and Dr. Bindu Dey, Secretary, TDB interacted with faculty and Master's students of Pharmacy during their visit to Acharya & B.M Reddy College of Pharmacy, Bangalore. During the interaction with them, the Director, CEFIPRA disseminated the information on various activities & programmes of CEFIPRA. In his address, he encouraged & motivated students to develop necessary skills and research acumen as per their interest and talent.

Discussion Meeting with French IRC Members



Discussion Meeting with French IRC Members

Director, CEFIPRA had a meeting with Mr. Daniel Vellou & Mr. Marc Stehle, members of Industrial Research Committee (IRC) of CEFIPRA on 27th & 28th September, 2018 at Paris. Director, CEFIPRA during the meeting welcomed the new French member and discussed guidelines and various means for strengthening Industry-Academia Research & Development Programme (IARDP). Mr. Daniel Vellou is recently associated with IRC. Discussion was held for the outreach of IARDP to facilitate & encourage the involvement of micro, small and medium-sized enterprises (SMEs) and Start-ups in the programme.

Acknowledging the Recent Developments

Government of India constituted a new committee on 28th August, 2018 under the chairmanship of Principal Scientific Advisor (PSA), Prof. K. VijayRaghvan as Chairman of Prime Minister's Science, Technology and Innovation Advisory Council (STIAC). **Prof. Ajay Kumar Sood** and **Dr. Sanghamitra Bandyopadhyay** have been elected amongst the nine panel members to STIAC. The Committee has been formulated to advise the Hon'ble Prime Minister of India on all matters related to ST&I and monitor the implementation of PM's vision on the same. It will facilitate the formulation and implementation of policies and decisions provide action-oriented and future preparedness advice and assist in directing S&T to solve the socio-economic problems in the country. It will also have a large focus on driving innovation in education, research, industry etc. CEFIPRA family congratulates Professor Ajay Kumar Sood (Distinguished Honorary Professor of Physics at Indian Institute of Science, Bangalore) and Dr. Sanghamitra Bandyopadhyay (Professor, Machine Intelligence Unit, Indian Statistical Institute, Kolkata) for being nominated as members of STIAC along with other panel members.

Meetings with MESRI and INSERM Officials



Meetings at the Ministry of Education, Research and Innovation, Govt. of France and INSERM Headquarters at Paris

Discussion was held on 26th September, 2018 between Dr. Mukesh Kumar, Director, CEFIPRA and senior officials of the Ministry of Higher Education, Research and Innovation (Ministère de l'Enseignement supérieur, de la Recherche et de l'Innovation, MESRI) at Paris. The MESRI is a ministry (government department) of France overseeing university-level education and research. A discussion was held in continuation of earlier interactions in May & June, 2018 and was arranged by CEFIPRA's French member of Scientific Council Dr. Olivier Pironneau, Emeritus Professor, Université Paris VI Laboratoire Jacques-Louis Lions (LJLL), Paris. Director, CEFIPRA explained various activities wherein MESRI may utilize this unique platform for further strengthening of Indo-French cooperation in S&T.

Director, CEFIPRA also met with the officials & scientists of Institut National de la Santé et de la Recherche Médicale (INSERM), France on 27th September, 2018. A discussion was held in view of recently signed Memorandum of Understanding (MoU) between INSERM and the Indian Council of Medical Research (ICMR) wherein CEFIPRA as a platform has been mentioned to strengthen collaborative relations between India and France within the framework of international scientific and technological cooperation in fields of mutual interest.

The scientific excellence on two sides, will help to successfully work on health research in specified areas like Diabetes and Metabolic disorders; Bio-ethics with focus on ethics and regulatory issues of Gene Editing Techniques; Rare Diseases etc.

Meeting with Prof. Alok Srivastava and Dr. Patrick Ducoroy

Meetings were held with Prof. Alok Srivastava, Department of Haematology, Christian Medical College, Vellore, India and Dr. Patrick Ducoroy, CEO, Biomane, Dijon, France for discussion on IARDP in the forenoon of 28th September, 2018 at Paris. The meetings aimed to promote linkages between Industry and Academia of France and India as well as for the development of processes/products through industry centric proposals focusing on the needs.

Upcoming Events of CEFIPRA

- The Scientific Council (SC) Meeting will be held from 19th-21st November, 2018 at Thiruvananthapuram, Kerala.
- The Overlapping Meeting will be held from 22nd November, 2018 at Thiruvananthapuram, Kerala.
- The IRC Meeting will be held from 23rd-24th November, 2018 at Thiruvananthapuram, Kerala.
- Indo-French School on "Magnetism of Molecular Systems" will be held from 26th-30th November, 2018 at Indian Institute of Science, Bangalore.

Mobility of Indian Scientists/Researchers/Students supported under CEFIPRA projects during July-September 2018

S.No	Project / Programme Title	Institutional Affiliation (From)	Name / Institution Visited (To)
1	H ₂ evolution: cheap catalysts for noble task	Prof. Abhishek Dey (PI) Indian Association for the Cultivation of Science Kolkata	Dr. Vincent Artero (PI) Laboratoire Chimie et Biologie des Métaux, CEA (CEA) Grenoble
2	Glimpses of new physics	Mr. Avik Banerjee (PhD std.) Saha Institute of Nuclear Physics Kolkata	Dr. Emilian Dudas (PI) Ecole Polytechnique Palaiseau
3	Modeling soft glassy flow from micro to macro scale	Dr. Pinaki Chaudhuri (PI) Institute of Mathematical Sciences Chennai	Dr. Kirsten Martens (PI) Laboratoire Interdisciplinaire de Physique Grenoble
4	Micro-SQUID magnetometry of nano-scale magnetic structures	Mr. Sagar Paul (PhD std.) Indian Institute of Technology Kanpur	Prof. Hervé Courtois (PI) Université Joseph Fourier Grenoble
5	Cosmological evolution of the cold gas from quasar absorption lines	Prof. Neeraj Gupta (PI) Inter-University Center for Astronomy and Astrophysics Pune	Dr. Pasquier Noterdaeme (PI) Institut d'Astrophysique de Paris Paris
6	Elucidation of conserved molecular signatures and regulators for blood cell progenitor maintenance	Ms. Diana Rodrigues (PhD std.) Jawaharlal Nehru Centre for Advanced Scientific Research Bangalore	Dr. Lucas Waltzer (PI) Centre de Biologie du Développement Toulouse
7	Characterization of factors that determine the balance between genomic integrity and diversity in <i>Helicobacter pylori</i>	Mr. Gaurav Gunjal (PhD std.) Indian Institute of Science Bangalore	Dr. J. Pablo Radicella (PI) Commissariat à l'Energie Atomique et aux énergies alternatives (CEA) Fontenay aux Roses
8	Electrical addressing and control of the plasmonic properties of coupled metal nanowire	Mr. Deepak Kumar Sharma (PhD std.) Indian Institute of Science Education and Research Pune	Dr. Alexandre Bouhelier (PI) Université de Bourgogne Dijon
9	Wavelet graphs for gravitational wave searches	Dr. Archana Arun Pai (PI) Indian Institute of Technology-Bombay Mumbai	Dr. Eric Chassande-Mottin (PI) Université Paris Diderot Paris

10	Control of microtubule dynamic instability by the tubulin code	Dr. Minhaj Sirajuddin (PI) Institute for Stem Cell Biology and Regenerative Medicine Bangalore	Mr. Carsten Janke (PI) Institut Curie Paris
11	A genome-wide study to identify novel regulators of chromosome stability using a human pathogenic yeast <i>Candida albicans</i> as the model	Ms. Priya Jaitley (PhD std.) Jawaharlal Nehru Centre for Advanced Scientific Research Bangalore	Dr. Christophe D'Enfert (PI) Institut Pasteur Paris
12	Tuning the interfacial Dzyaloshinskii-Moriya interaction in ultrathin	Prof. Subhankar Bedanta (PI) National Institute of Science Education and Research Bhubaneswar	Dr. Stanislas Rohart (PI) Université Paris-Sud Orsay Cedex
13	Nuclear structure at the extreme of isospin and spin	Mr. Ranabir Banik (PhD std.) Variable Energy Cyclotron Centre Kolkata	Dr. Navin Alahari (PI) Grand Accélérateur National d'Ions Lourds (GANIL) Caen
14	Nuclear structure at the extreme of isospin and spin	Dr. Sarmishtha Bhattacharyya (PI) Variable Energy Cyclotron Centre Kolkata	Dr. Navin Alahari (PI) Grand Accélérateur National d'Ions Lourds (GANIL) Caen
15	Extreme events and large deviations in strongly correlated many body systems	Pr. Anupam Kundu (Co-PI) The International Centre for Theoretical Sciences Bengaluru	Dr. Gregory Schehr (PI) Laboratoire De Physique Théorique Et Modeles Statistiques (LPTMS) Orsay
16	Radio properties of clusters and galaxy lenses	Mr. Pratik Dabhade (PhD std.) Inter University Centre for Astronomy and Astrophysics Pune	Dr. Bruno Guiderdoni (PI) Observatoire de Lyon- CRAL Saint Genis Laval Cedex
17	Mechanism of polarity reversals in <i>Myxococcus xanthus</i>	Dr. Gayathri Pananghat (PI) Indian Institute of Science Education and Research Pune	Dr. Tam Mignot (PI) Laboratoire de chimie bactérienne, CNRS Marseille

Visitors at CEFIPRA

1st August, 2018 Prof. Narayana S. Kalkura, Crystal Growth Centre, Anna University, Chennai. He is an Indian PI of CEFIPRA supported CSRP project entitled “Biodegradable core shell electrospun mats and interconnected porous scaffolds for tunable anticancer drug delivery and tissue engineering application”. This project started on 15th November, 2016 and is ongoing.

1st August, 2018 Dr. Savita Yadav, AIIMS. She was the Indian academic collaborator of the project entitled “AMIR-PepKit IVD: R&D of a peptide-based - diagnostic kit for an early detection of a fatal immune response in acute myocardial infarction patients”. The project implemented by CEFIPRA under the 1st Call of the BIRAC-CEFIPRA-French Embassy Programme.

Mobility of French Scientists/Researchers/Students supported under CEFIPRA projects during July-September 2018

S.No	Project / Programme Title	Institutional Affiliation (From)	Name / Institution Visited (To)
1	Biodegradable core shell electrospun mats and interconnected porous scaffolds for tunable anticancer drug	Dr. Sakthivel Nagarajan (Post-Doc) European Institute of Membranes Montpellier	Prof. Narayana S Kalkura (PI) Anna University Chennai
2	The economics of networks and queues	Dr. Urtzi Ayesta (Co-PI) Université d'Avignon Avignon	Prof. Manjesh Kumar Hanawal (PI) Indian Institute of Technology- Bombay Mumbai
3	The economics of networks and queues	Dr. Manukumar Gupta (Post-Doc) Université d'Avignon Avignon	Prof. Manjesh Kumar Hanawal (PI) Indian Institute of Technology- Bombay Mumbai
4	Yielding in glasses and colloidal systems under cyclic deformation	Prof. Giuseppe Foffi (PI) Université Paris Sud Paris	Prof. Srikanth Sastry (PI) Jawaharlal Nehru Centre for Advanced Scientific Research Bangalore
5	Original biocompatible phosphorus dendrimers as a new strategy to tackle pulmonary tuberculosis	Dr. Anne-Marie Caminade (PI) Laboratoire de Chimie de Coordination Toulouse	Prof. Kishore K. Srivastva (PI) Central Drug Research Institute Lucknow
6	LORIC: Long-Range Interactions in ultraCold gases	Dr. Olivier Dulieu (PI) Laboratoire Aimé Cotton Orsay	Prof. Sadiqali Abbas Rangwala (PI) Raman Research Institute Bangalore

List of Successful Candidates announced for ESONN Fellowship-2018

The Department of Science and Technology (DST), GoI & the Indo-French Centre for the Promotion of Advanced Research (IFCPAR / CEFIPRA) in collaboration with Université Grenoble Alpes, Grenoble, France has supported the participation of following 8 Indian doctoral students to European School on Nanoscience and Nanotechnology (ESONN)- Session 2018 during August 26th - September 15th, 2018 at Grenoble, France for the DST- CEFIPRA Fellowship for ESONN Programme-2018:

S.No	Name of the Candidate	Host Institution
1	Mr. Chandan Kumar	Indian Institute of Technology (BHU), Varanasi
2	Mr. Monu Mishra	AcSIR/ CSIR-National Physical Laboratory, New Delhi
3	Ms. Nishta Arora	Indian Institute of Science, Bengaluru
4	Ms. Debalina Deb	University of Kalyani, Kalyani
5	Ms. Maithri Tharmavaram	Gujarat Forensic Sciences University, Gandhinagar
6	Mr. Bhaskar Das	National Institute of Technology Rourkela, Rourkela
7	Ms. Prajakta Vilas Tambe	Savitribai Phule Pune University, Pune
8	Ms. Pranjita Ganesh Zantye	BITS, Pilani

Changes in the pattern of CSRP from 2019 onwards

CEFIPRA considers and supports research groups through high quality collaborative research projects in advanced areas of basic and applied sciences to nurture scientific competency in India and France. As per the change in pattern, CEFIPRA would keep the July 15th deadline as Open to receive proposals under CSRP as existed. However, for the January 15th deadline, the Call may be in priority on thematic/targeted areas which will be decided by Scientific Council of CEFIPRA from time to time.

Eligibility to apply

Principal Collaborators and Joint Collaborators (Indian & French) should have permanent position in an Indian or French University/R&D Institutions. They should meet national level eligibility criteria with respect to the operation of grants and age of retirement.

Funding support for the proposals

- Manpower (PhD/Post-doctoral/Master students positions for French Partners; JRF/SRF/RA/Master students for Indian Partners)
- Purchase of consumables
- Travel (International & domestic)
- Equipment (only to Indian Partners : Minor equipment and accessories which are essential for the project with a limit of max. of 10% of total approved budget of the project (max. 20.000 Euros)

As per new pattern, in CSRP for the deadline of Jan. 15th, each year, the priority will be given for thematic areas.

However, proposals under all identified domains of S & T Areas of CEFIPRA will be received for the deadline of July, 15th, each year provided these are original, collaborative and of high scientific quality.

The following are the priority themes for the **deadline of 15th January, 2019:**

1. 2D Materials and their Heterostructures.
2. High-throughput Computational Materials Design
3. Genomics approaches to problems addressing Health and Nutrition
4. Host-microbe-Interactions in Health and Agriculture
5. Biological questions using or developing Mathematical, Computational or Physical approaches
6. Marine Biology and Ecology (including projects on development and evolution)
7. Modeling of Earth Materials at Extreme Conditions
8. Multifunctional Materials and the Underlying Science
9. Exotic States of Materials and Quantum Criticality
10. Biological Chemistry (Chemistry for unravelling the biological process)
11. Biopolymers
12. Catalysis

In addition to the above proposals under identified domains of S & T Areas of CEFIPRA as existed will also be considered for this deadline of 15th Jan., 2019.



Indo-French Centre for the Promotion of Advanced Research/ Centre Franco-Indien pour la Promotion de la Recherche Avancée (CEFIPRA) is a model for international collaborative research in areas of Science & Technology. The Centre was established in 1987 being supported by Department of Science & Technology, Government of India and the Ministry for Europe & Foreign Affairs, Government of France. CEFIPRA is actively involved in supporting Indo-French Science, Technology & Innovation system through various activities. Collaborative Scientific Research Programme (CSRP) focuses on Academia-to-Academia Collaborations between Indian and French Academic Collaborators in various domains of S&T.

Industry Academia Research & Development Programme (IARDP) emphasizes to develop the linkages between Industry and Academia from France and India. Dedicated mobility support Programmes of CEFIPRA provide exposure to young researchers for the working in social and cultural environment of the partnering country. Targeted Programmes of CEFIPRA provide platform for Indian and French National Funding Agencies to implement programmes for specific areas. Innovation Programmes through PPP mode are the programmes where industries join hands with CEFIPRA as a funding partner for supporting R & D in defined priority areas.



For further information please contact:

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