

KNOWLEDGE SUMMIT

INDIA-FRANCE • HIGHER EDUCATION • RESEARCH • INNOVATION

10th - 11th March 2018
New Delhi

RECOMMENDATIONS

for the Future
of Indo-French Cooperation
in Higher Education, Research
and Innovation

FOREWORD

BY THE HON'BLE MINISTERS



H.E. Mrs. Frédérique Vidal
*Minister of Higher Education,
Research and Innovation,
Government of France*

France, one of the most innovative countries in the world, and India whose reputation needs no introduction, have much to share. For this exchange to be efficient and gainful for all, certain conditions are necessary. **Let us reinforce human exchanges in this domain, call upon our experts and our enterprises to intensify their common projects and forge a veritable partnership between our two countries towards the objective of contributing innovative solutions. This is the entire objective of this Knowledge Summit.** I am delighted that so much talent has come together today and tomorrow to create our common road-map towards the future. The challenges are big. We will meet them.



Shri Prakash Javadekar
*Honorable Minister of
Human Resource Development,
Government of India*

The Knowledge Summit is a great opportunity for us to learn from each other. And today's world is so complex that we learn every day, every moment, from each other. And we should continue to do that, this is cooperation. **The signing of the first of its kind bilateral agreement facilitating mutual recognition of academic qualifications is the best part of the Knowledge Summit story, but I want to take it even further.** We should allow, on reciprocity basis, practitioners to practice in each other's countries. Since the world is one and is a global village, we should be ready to take the best and compete. That is the way to progress.

INTRODUCTION

BY THE AMBASSADOR OF FRANCE



H.E. Alexandre Ziegler
Ambassador of France to India

The Knowledge Summit was a historic moment for France and India. Organised during the State visit of President Emmanuel Macron, the first ever Indo-French high-level summit on higher education and research served as the grand finale of Bonjour India 2017-2018, the four-month long platform dedicated to innovation, creativity, and partnerships.

Held under the high patronage of H.E. Mrs. Frédérique Vidal, Minister of Higher Education, Research and Innovation of France and Shri Prakash Javadekar, Hon'ble Minister of Human Resource Development of India, the summit brought together more than 300 participants from leading Indian and French higher education and research institutions and companies. Fifteen agreements were signed, including a historic bilateral agreement on mutual recognition of academic qualifications, which will bolster the mobility of our students, researchers and young professionals.

Recommendations from the summit, approved by the Ministers, will be a roadmap for the future of our collaboration. These recommendations are presented in this book.

The implementation of this roadmap has already begun. In June, a joint science and technology committee meeting was held, which will be followed, in the coming months, by a joint working group on higher education and science involving all the ministries concerned. The two forthcoming 'Choose France Tours' will help us move forward with the new partnerships created during the Knowledge Summit as well as augment the mobility of students, young scientists and entrepreneurs.

These upcoming milestones will enable us to bring to fruition the conclusions of the Knowledge Summit and help us achieve our goal of welcoming 10,000 Indian students every year to France by 2020. They will also enable us to mobilise all our partners in the view of the second, more ambitious, Knowledge Summit to be held in France in 2019. Let us work together to realise this shared vision of an Indo-French partnership based on creativity and innovation!

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THE KNOWLEDGE SUMMIT

EXECUTIVE SUMMARY

On the occasion of the first State visit of President Emmanuel Macron to India, the French Institute in India, along with the Ministry of Higher Education, Research & Innovation, Government of France and the Ministry of Human Resource Development, Government of India, jointly organized the Knowledge Summit. This first high-level Indo-French summit on higher education, research and innovation was held on 10th and 11th March 2018 in New Delhi, in collaboration with the Ministry of Science and Technology, Campus France, and the Confederation of Indian Industry.

The Summit was inaugurated by H.E. Mrs. Frédérique Vidal, Minister of Higher Education and Research and Innovation, Government of France and Shri Prakash Javadekar, honorable Minister of Human Resource Development, Government of India.

The Knowledge Summit brought together more than 300 participants from 90 Indian institutions, 78 French institutions and 59 companies. H.E. Mrs. Frédérique Vidal was joined by a delegation composed of the Presidents of the Conference of the Directors of French Engineering Schools (CDEFI), the Conference of Grandes Écoles (CGE) and the Conference of University Presidents (CPU), along with the CEOs of the National Institute for Agricultural Research (INRA) and the National Institute of Health and Medical Research (INSERM).

The two-day meeting offered a common moment for common goals: to increase student mobility, to increase Research & Development

collaborations, and to link campuses with companies by focusing on employability.

On the first day were organised plenary sessions with representatives from leading institutions delivering an overview on the Indian and French higher education, research and innovation landscapes. On the second day took place roundtables on several topics of mutual interest: Smart Cities, Aeronautics & Aerospace, Agriculture and Food Processing, Building World Class Educational Institutions in Partnership with the Private Sector, Eco-Energy, Mathematics and Information Technology, Natural Resources & Bio-Products, and Strengthening Employability and Entrepreneurship. The recommendations from these roundtables presented in this report will guide Indo-French cooperation in education and research for the next five years.

15 MoUs were unveiled on the occasion of the summit, most of them focusing on facilitating education and research collaborations between Indian and French research institutes and companies, and a long-awaited, significant agreement on mutual recognition of academic qualifications between the two countries was also signed. Thus, students who have obtained secondary school degrees or higher in India will now easily be able to pursue higher studies in France, and vice versa.

The summit finally unveiled a Franco-Indian Education Trust, funded by Indian industry and French companies in India to offer educational scholarships and merit-based financial support to young talents.

AGENDA

Day 1
Pravasi Bhartiya Kendra

10th March 2018

09 h 30 WELCOME COFFEE

11 h 00 OPENING SESSION

- Speech by **Shri Prakash Javadekar**, *Hon'ble Minister of Human Resource Development*
- Speech by **H.E. Mrs. Frédérique Vidal**, *Minister of Higher Education, Research and Innovation*
- Unveiling of agreements between Indian and French Institutions
- Photo Session

11 h 50 FUTURE PROSPECTS OF INDO-FRENCH COOPERATION

- **Mr. R. Subrahmanyam**, *Secretary Higher Education, Ministry of Human Resource Development*
- **Mrs. Béatrice Khaiat**, *Director General, Campus France*
- **Dr. Bertrand de Hartingh**, *Counsellor for Cooperation and Cultural Affairs, Embassy of France*

12 h 20 OPPORTUNITIES FOR PARTNERSHIP *Evolution of University Systems*

- **Prof. Gilles Roussel**, *President, Conférence des Présidents d'Université (CPU)*
- **Prof. Furqan Qamar**, *Secretary General, Association of Indian Universities*

13 h 00 NETWORKING LUNCH

14 h 10 JOINT CHALLENGES IN SCIENCE AND TECHNOLOGY

- **Prof. Ashutosh Sharma**, *Secretary, Department of Science and Technology, Ministry of Science & Technology*
- **Prof. Alain Beretz**, *Director General, Research and Innovation, Ministry of Higher Education, Research and Innovation*
- **Dr. Ramesh Datla**, *Chairman & Managing Director, ELICO Limited*

14 h 50 A NEW VISION *Integrated Cooperation In Training, Research & Innovation*

- **Prof. Marc Renner**, *President, Conférence des Directeurs des Ecoles françaises d'Ingénieurs (CDEFI)*
- **Dr. Uday B. Desai**, *Director, IIT Hyderabad; Engie Group representative*

15 h 30 BREAK

16 h 00 BOOSTING STUDENT MOBILITY

- **Mr. K.K. Sharma**, *Former Secretary Higher Education, Ministry of Human Resource Development*
- **Prof. Anne-Lucie Wack**, *President, Conférence des Grandes Ecoles (CGE)*
- **Dr. Rupamanjari Ghosh**, *Vice Chancellor, Shiv Nadar University*

16 h 40 TOWARDS MULTILINGUAL STUDENTS

- **Mr. Ranjan Mitter**, *Principal, Future Foundation School, Kolkata*
- **Prof. Frédérique Pénilla**, *President, Campus FLE Network, ADCUEFE*
- **Mr. Tirthankar Goyal**, *Chief Executive Officer, TG Consulting - Think Global*

17 h 20 NETWORKING HIGH TEA

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Day 2
India Habitat Centre, Entrance Gate no 3

11th March 2018

09 h 00 WELCOME COFFEE

09 h 30 **PARALLEL ROUND-TABLES I**

1. SMART CITIES

Electric Mobility / Urbanism

Co-chairs: **Prof. Yves Poilane**, *Director, Telecom ParisTech*; **Prof. Gitakrishnan Ramadurai**, *IIT Madras*

Special Expert: **Prof. Utpal Sharma**, *Director, Institute of Architecture, Nirma University*

Companies: **Renault/Faurecia/Engie**

Venue: **Gulmohar**

2. AERONAUTICS & AEROSPACE

New Technologies & Challenges / Observation & Communication Satellites

Co-chairs: **Prof. Olivier Pironneau**, *Académie des Sciences*; **Prof. Manindra Agrawal**, *Director, IIT Kanpur*

Special expert : **Dr. Jean Chazelas**, *Corporate Technical Directorate, Thales Airborne Systems*

Companies: **Dassault Aviation/Ariane Group**

Venue: **Casuarina**

3. AGRONOMY & FOOD PROCESSING

Sustainable Agriculture / Product Processing

Co-chairs: **Mr. Philippe Mauguin**, *President, INRA*; **Mr. Girish Sohani**, *President, BIAF Development Research Foundation*

Special Expert: **Dr. Chindi Vasudevappa**, *Vice Chancellor, National Institute of Food Technology*

Companies: **Soufflet Malt India Pvt. Ltd./Sonalika Group**

Venue: **Magnolia**

4. BUILDING WORLD CLASS EDUCATIONAL INSTITUTIONS IN PARTNERSHIP WITH THE PRIVATE SECTOR

Innovative Tools for Education / Collaboration between Academia & Industry

Co-chairs: **Prof. Patrick Levy**, *President, Université Grenoble*; **Prof. Rajender S. Sangwan**, *Director, AcSIR*

Special Expert: **Mr. Christopher Ray Cripps**, *Director IR, Université Paris Sciences & Lettres*

Company: **Thales Group**

Venue: **Theatre**

11 h 45 **BREAK**

12 h 00 **PARALLEL ROUND-TABLES II**

5. ECO-ENERGY

Renewable Energy, Solar / Energy Storage & Smart Grids

Co-chairs: **Dr. Jean-François Pinton**, *President, ENS Lyon*; **Dr. Vishal Verma**, *Dean, Delhi Technological University (DTU)*

Special Expert : **Dr. Pierre-Jean Ribeyron**, *Senior expert, CEA*

Companies: **Société Générale/Vicat/Schneider Electric**

Venue: **Gulmohar**

6. MATHEMATICS & INFORMATION TECHNOLOGY

Fundamental & Applied Mathematics / Artificial Intelligence & Big Data

Co-chairs: **Prof. Sylvie Benzoni**, *Director, Institut Henri Poincaré*; **Prof. Anurag Kumar**, *Director, IISc, Bangalore*

Special Expert: **Dr. Manoj Singh Gaur**, *Director, IIT Jammu*

Companies: **TCS/Atos**

Venue: **Casuarina**

7. NATURAL RESOURCES & BIO-PRODUCTS

Bioactive Plant Compounds / Green Alternative Products

Co-chairs: **Prof. Pierre Van de Weghe**, Vice President, Université Rennes 1; **Prof. Pradeep Mathur**, Director, IIT Indore

Special Expert: **Prof. S. Chandrasekhar**, Director, IICT

Companies: **L'Oréal/Mane**

Venue: **Magnolia**

8. STRENGTHENING EMPLOYABILITY & ENTREPRENEURSHIP

Empowerment via Vocational Training / Entrepreneurship & Start-Ups

Co-chairs: **Mr. Didier Desplanche**, Director General, ECAM Lyon; **Prof. Krishnan Balasubramanian**, IIT Madras

Special Expert : **Mr. Paul Livolsi**, Head, MCF INSTN, CEA

Company: **Dassault Aviation/L'Oréal**

Venue: **Theatre**

14 h 00 **LUNCH & MEETINGS**

15 h 30 **RESEARCH, DEVELOPMENT & INNOVATION**

How To Benefit From The Ifcpar/cefipra

Dr. Mukesh Kumar, Director, Indo-French Centre for the Promotion of Advanced Research

Mr. Chandrajit Banerjee, Director General, Confederation of Indian Industry

Venue: **Stein Auditorium**

16 h 00 **CLOSING SESSION – MAPPING THE FUTURE OF INDO-FRENCH COLLABORATION**

- Recommendations by the Round-table Chairs
- Unveiling of the Franco-Indian Education Trust
Mr. Prshant Lahoti, Managing Trustee, Krishnakriti Foundation / Co-founder, Kalakriti India
Mrs. Shobana Kamineni, President, Confederation of Indian Industry
- Concluding remarks by **H.E Mrs. Frédérique Vidal**, Minister of Higher Education, Research and Innovation, Government of the French Republic
- Concluding remarks by **Shri Prakash Javadekar**, Hon'ble Minister of Human Resource Development, Government of India
- Venue: **Stein Auditorium**

TAKEAWAYS FROM PLENARY SESSIONS

This section summarises the presentations delivered during the first day of the Knowledge Summit.

Plenary Session 1:

Future Prospects of Indo-French Cooperation



Mr. R. Subrahmanyam

*Secretary Higher Education,
Ministry of Human Resource
Development*

In his plenary talk, Mr. R. Subrahmanyam presented the existing Indian higher education system and ongoing regulatory reforms. These reforms aim at giving more autonomy to institutions. He presented the SWAYAM platform which gives equal opportunity to access quality education and reaffirmed the government of India's commitment to internationalising Indian universities through the recruitment of foreign faculties with the GIAN programme, and attracting foreign students through the Study in India initiative. He concluded by calling on French universities to strengthen their partnerships with Indian institutions to increase mobility in light of this favourable context.



Mrs. Béatrice Khaiat

*Director General,
Campus France*

Mrs. Béatrice Khaiat argued that France is the 4th country when it comes to welcoming international students, yet only 5,000 Indian students are studying in France. With so many Indian tourists visiting the country, she said India should become one of the first 20 countries sending students to France. She then presented how France is an attractive destination for Indian students, having to do with the low cost and high quality of its higher education and research institutions, the existence of programmes taught in English, the close links between academia and industry, and employability prospects, as France with 1,000 companies is the first foreign employer in India.



Dr. Bertrand de Hartingh

*Counsellor for Cooperation
and Cultural Affairs,
Embassy of France*

Dr. Bertrand de Hartingh presented the Knowledge Summit, organised at the occasion of the visit of Hon'ble French President, as a historic moment, thanks to the mobilisation of a great number of elite establishments and enterprises, including the three presidents of French higher education institutional associations. He expressed his confidence that the recommendations from this summit will lead to an ambitious roadmap for Indo-French university cooperation for the next five years. He also emphasized the necessity to link higher education and research with enterprises to democratize education and to increase student mobility.

Plenary Session 2:

Opportunities for Partnership: Evolution of University Systems

**Prof. Gilles Roussel**

*President, Conférence des
Présidents d'Université
(CPU)*

Prof. Gilles Roussel is the President of French University Association. He presented the French university system and its attractiveness for international students (i.e. low tuition fees, curricula taught in English, excellence in education and research). He expressed his hope that more Indian students will come to French universities not only to study but also to do research, especially in topics such as mathematics, computer science, physics, chemistry, energy and social sciences. He concluded by saying that current reforms of French universities will grant them more autonomy and funding through the Future Investment Plan, which enables them to build ambitious partnerships with their Indian counterparts.

**Prof. Furqan Qamar**

*Secretary General,
Association of Indian
Universities (AIU)*

Prof. Furqan Qamar explained that despite its size and diversity, the Indian higher education system is not so complex and went on to detail its structure. He recalled how AIU and CPU have collaborated over the past few years, which has led to educational exchanges and knowledge partnerships between many Indian and French institutions. He further added that French and Indian higher education institutions are working on collaborative research, training programs, exchange of faculty, research fellowships and information-sharing that would play a very important role in promoting mobility in both the directions. Finally, he hailed the signing of the bilateral agreement to facilitate mutual recognition of diplomas.

Plenary Session 3:

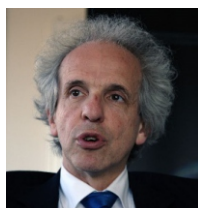
Joint Challenges in Science and Technology



Prof. Ashutosh Sharma

Secretary, Department of Science and Technology, Ministry of Science & Technology, and Co-Chair, CEFIPRA

Prof. Ashutosh Sharma recalled the long and rich history of scientific and technological cooperation between France and India. He further stressed the role of CEFIPRA in supporting quality collaborative research for the past 30 years and the need to connect its activities to challenges such as Make in India, Startup India, Smart City Mission etc. Prof. Sharma called for more joint research on mathematics and artificial intelligence, water, or solar energy, for which he proposed establishing an Indo-French solar energy, research and innovation centre. He added that researchers' mobility should be encouraged, and that French researchers should also settle in India. Finally, he suggested to hold a high-level joint committee to stir up and ease S&T cooperation.



Prof. Alain Beretz

Director General, Research and Innovation, Ministry of Higher Education, Research and Innovation

Prof. Alain Beretz presented the diversity of innovation approaches, saying that France can learn much from India's expertise in frugal innovation. He mentioned four ways to develop innovation and strengthen employability: 1) Entrepreneurship of PhD students, 2) Hackathons and national science fairs, 3) Collaboration with centres of excellence that address education, research and innovation and 4) Indo-French Joint committee to ensure effective follow up of actions. He emphasized that the Future Tour and the Knowledge summit have produced tangible material that demonstrates the potential of Indo-French cooperation.



Dr. Ramesh Datla

Chairman & Managing Director, ELICO Limited

Dr. Ramesh Datla presented how India is becoming a R&D hub for both Indian and multinational companies. He then called on academia and industry to work more together, with an opportunity for research and innovation partnerships to benefit from the support of CEFIPRA, SERB, or CII. He also highlighted how French companies are actively collaborating with India on Smart City initiative, Make in India program, Solar Alliance etc. He emphasised that France can play a major role in the area of IPR for sharing and transferring of technology. India and France can integrate SMEs into a global value chain to improve their competitiveness and creating awareness and opportunities for both countries.

Plenary Session 4:

A New Vision: Integrated Cooperation in Training, Research & Innovation**Prof. Marc Renner**

*President, Conférence des
Directeurs des Ecoles françaises
d'Ingénieurs
(CDEFI)*

Prof. Marc Renner presented French engineering schools and their specificity (management courses, projects, international internship experience), enabling them to train highly-employable students and to foster innovation in cooperation with the private sector. He then explained how Indian students can benefit from studying in French engineering schools, which includes doing an internship in a company, or by doing a PhD in a research laboratory. Finally, he called for more partnerships between French engineering schools and Indian institutions, especially in joint research programmes.

**Dr. Uday B. Desai**

*Director,
IIT Hyderabad*

Dr. Uday B. Desai highlighted how IITs and IISc support research, development and innovation through startup incubators. Incubators and research parks are crucial for students to gain exposure to entrepreneurship and to create economic value, and he stressed that a strong innovation ecosystem can only emerge in India if these incubators are connected with others abroad. To strengthen exchanges between Indian and French students and R&D practitioners, Dr. Desai suggested creating five Indo-French virtual innovation centres on different themes (including one on AI), and to allocate more funds to support short visit programmes.

Plenary Session 5:

Boosting Student Mobility



Mr. K.K. Sharma

*Former Secretary
Higher Education, Ministry of Human
Resource Development*

Mr. K.K. Sharma welcomed the signing of the bilateral agreement facilitating the mutual recognition of diplomas, saying it will encourage students in a variety of fields to consider studying in France and in India and will enhance mobility of researchers and professionals. He urged participants to work towards further enhancing student and faculty exchanges and promoting joint research between universities in both France and India. He finally developed on the ongoing reforms of UGC and university autonomy that will increase openness and competitiveness of the Indian higher education system.



Prof. Anne-Lucie Wack

*President, Conférence des
Grandes Ecoles (CGE)*

Prof. Anne-Lucie Wack presented the Grandes Ecoles system, which gathers elite engineering and management institutions, to complete the overview of higher education in France. She informed that almost 80% Indian students in France are studying in Grandes Ecoles which depicts the dynamics of this cooperation. She emphasized that in order to boost student mobility there is a need to promote reciprocal knowledge of India and France. She also mentioned the importance of leveraging the alumni network in the two countries, and called for easing visa policies to facilitate student and internship mobility.



Dr. Rupamanjari Ghosh

*Vice Chancellor,
Shiv Nadar University*

Dr. Rupamanjari Ghosh focused on devising incentives to boost international mobility such as new funding mechanisms, organizing safety campaigns, ensuring quality healthcare and providing language training and support. She mentioned that internationalization of higher education should involve students, faculties and lead to sharing best administrative practices in academia, research and innovation. She stressed the importance of a bottom-up approach engaging the faculty and the students for a stable, self-sustaining partnership between Indian and French institutions.

Plenary Session 6:

Towards Multilingual Students

**Mr. Ranjan Mitter**

*Principal,
Future Foundation School,
Kolkata*

In his speech, Mr. Mitter developed on how multilingualism in India could be a positive discriminator among students and professionals. He highlighted the role of French governmental agencies in India which provide Indian students with the necessary equipment to learn the French language, not just as a program but also as a cultural tool to carve their towards success. He urged students to choose France as one's education destination where one can attain access to an excellent and affordable education systems and a wonderful exposure to a unique culture, tradition and lifestyle.

**Prof. Frédérique Pénilla**

*President,
Campus FLE Network,
ADCUEFE*

Prof. Frédérique Pénilla is the president of the French national association of university language centers for foreign students. She explained how being a multilingual student makes one more aware, more secure and more confident in their cultural identity, and how it also broadens their horizon and possibilities. She also informed that French cultural centers and French Alliances established throughout India provide plenty of opportunities, which Indian institutions should take best advantage of. She finally suggested to devise bilateral cooperation programs to study in French universities.

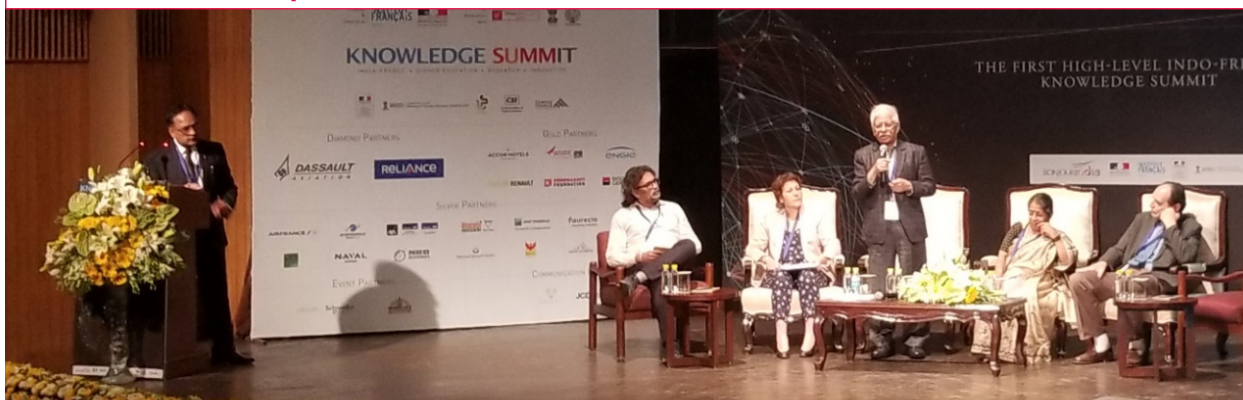
**Mr. Tirthankar Goyal**

*Chief Executive Officer,
TG Consulting - Think Global*

Mr. Goyal stressed the importance of being multilingual in an increasingly globalized world. He said that multilingualism opens the door to new cultures, promotes creative tolerance, improves cognitive skills and helps engaging with diverse communities. He shared his experience on how being fluent in French has given a new dimension to his professional networking in France. He also talked about France being the third most popular education destination for international students and a provider of high quality education and exposure.

Plenary Session 7:

Research, Development & Innovation: How to Benefit from the IFCPAR/CEFIPRA?



Indo-French Centre for the Promotion of Advanced Research (IFCPAR/CEFIPRA) is a unique model for international collaborative research in advanced areas of Science & Technology. The idea of setting up a joint centre for promoting collaboration between Indian and French scientists came up first during a discussion between the then Indian Prime Minister, Mrs. Indira Gandhi and the then French President, Mr. Valéry Giscard d'Estaing. This suggestion was reiterated by the French President Mr. Valéry Giscard d'Estaing in 1980. The Centre was established in 1987 and is 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 (ST&I)

system through various activities. Scientific Collaborative Research Programme focuses on academia-to-academia collaborations between Indian and French academic collaborators in various domains. Industry Academia Research & Development Programme emphasises the development of a linkage between Industry and Academia from France and India. The Raman-Charpak Fellowship was launched in 2013 to facilitate the mobility of PhD students and young researchers in France and India.

The session was conducted by Dr. Mukesh Kumar, Director of CEFIPRA. Prof. Olivier Pironneau Emeritus Professor, Université Pierre et Marie Curie, Prof. Rohini Godbole, IISc Bangalore, Dr. Sameer Khandekar, IIT Kanpur, Prof. Neila Bhourj, IFSTTAR and Prof. M.R.S Rao, JNCASR were present for their testimony of CEFIPRA.

Closing Session

Unveiling of the Franco-Indian Education Trust



Established on 31st August 2017, this non-profit organization based in Hyderabad endeavours to increase student and expert exchanges between India and France. Offering top quality education and scientific facilities at reasonable fees, France ranks third globally among countries welcoming the highest number of foreign students, yet hosts only 5,000 students from India. The French government currently invests €1 million (Rs. 7 crores) in over 500 scholarships per year in India. The Trust aims at doubling the number of scholarships that France gives every year to Indian students.

The Trust is charging no administrative costs to ensure that the full benefit of donations go to the scholarship awardees, who will be selected through calls for projects. The selection process will be conducted by the Institut Français India

(the French Embassy's cultural and cooperation wing) based on academic excellence, as well as the coherence and quality of the projects. The final candidates will be selected by the managing committee of the Trust. Candidates' knowledge of French would be an asset but is not mandatory.

The Franco-Indian Education Trust is offering four other types of programmes apart from the Amba Dalmia scholarship: Masters; PhD; internship; and short-term programmes (2-3 weeks) for scientists and young professionals.

The Trust was unveiled during the closing session entitled "Mapping The Future of Indo-French Collaboration" by H.E. Mrs. Frédérique Vidal, Shri Prakash Javadekar, Mr. Prshant Lahoti, Managing Trustee, Krishnakriti Foundation / Co-founder, Kalakriti India, and Mrs. Shobana Kamineni, President, Confederation of Indian Industry.

LIST OF AGREEMENTS SIGNED

The following agreements were respectively signed by the concerned Ministers at the occasion of the visit of the President of the French Republic to India, and during the Knowledge Summit or as a follow-up to the Future Tour by representatives of the concerned institutions.

Intergovernmental agreements

1. Agreement between the government of the French Republic and the government of the Republic of India to facilitate mutual recognition of academic qualifications.
2. Migration and Mobility Partnership Agreement between the government of the French Republic and the government of the Republic of India.

MoUs between Indian and French institutions

1. MoU between the Ecoles Normales Supérieures of Cachan, Lyon, Paris, Rennes, and the Indian Institutes of Science Education and Research of Berhampur, Bhopal, Kolkata, Mohali, Pune, Thiruvananthapuram, and Tirupati to foster the development of joint research and academic programmes, and to enhance, widen and intensify existing cooperation.
2. MoU between Ecole de Management de Lyon and Xavier University, Bhubaneswar for the creation of a XAVIER-EMLYON Business School in Bhubaneswar.
3. MoU between Centre National de la Recherche Scientifique (CNRS), Institut Mines Télécom Atlantique, Université de Bordeaux, Ecole Centrale Nantes and Indian Institute of Technology Madras to increase collaboration and mobility, doctorate and researchers exchange.
4. MoU between Rennes Business School and T.A. Pai Management Institute, Manipal for a French-India PhD exchange programme in management.
5. MoU between Ecole Centrale Lille and Dr. B. R. Ambedkar National Institute of Technology, Jalandhar to increase research and education cooperation and exchanges.
6. MoU between Institut Mines-Télécom (Paris) and Indian Institute of Technology, Indore to foster academic and scientific collaboration.

7. MoU between Institute LIST of the French Alternative Energies and Atomic Energy Commission (CEA) and Indian Institute of Technology Madras for academic and research collaboration in the areas of Non-Destructive Testing and structural health monitoring.
8. MoU between the Confédération Française pour les Essais Non Destructifs and the Indian Society for Non-Destructive Testing to develop cooperation regarding training and sharing of good practices.
9. MoU for Industry Sponsored Ph.D. Fellowship between Thales France, Thales India and Indian Institute of Technology, Madras.
10. Letter of Intent for an International Laboratory Associated between Institut national de la recherche agronomique (INRA) and BAIF Development Research Foundation.
11. MoU between the Defence Institute of Advanced Technology and Dassault.
12. MoU between CNRS, Sciences Po Paris, IEP Bordeaux, Université de Bordeaux and Ashoka University to set up the 'SPINPER' joint laboratory for creating a comprehensive database of sociological profile of elected officials in India
13. MoU between the Indian Council of Medical Research and the Institut national de la santé et de la recherche médicale (Inserm) to develop an international research network, cooperation in the field of Bioethics, and Rare Diseases.
14. MoU between the Institute of Liver and Biliary Sciences (ILBS), the Institut national de la santé et de la recherche médicale (Inserm), and Université Paris Diderot to set up a joint laboratory (LIA), to further the development of biomedical research relative to Metabolic and Liver Diseases, and to further exchanges between researchers and, possibly, members of the technical and administrative staffs.
15. Letter of Intent between the Indian Institute of Technology, Goa, the Campus Mondial de la Mer, CMM, representing the whole community of marine sciences and technology of Western Brittany, France, and Naval Group to launch the 'GOAT' Educational and Research Exchange Programme in the area of Marine Science and Technology.

Signed as an outcome of the Future Tour on Smart Cities: Urban Planning, Architecture & Design:

1. MoU on student mobility and research between Nirma University, and Ecole Nationale Supérieure d'Architecture (ENSA) Paris and ENSA Nantes.

RECOMMENDATIONS FROM ROUNDTABLE DISCUSSIONS

The roundtable discussions held at Knowledge Summit brought together more than 300 academics, researchers and industry representatives from 90 Indian higher education and research institutions, 78 French institutions and 59 companies. On the first day were organised plenary sessions with representatives from leading institutions delivering an overview of the Indian and French higher education, research and innovation landscapes.

On the second day took place roundtables on topics of mutual interest, in priority sectors for our bilateral cooperation: Smart Cities, Aeronautics & Aerospace, Agriculture and Food Processing, Eco-Energies, Mathematics and Information Technology, Natural Resources & Bio-Products. In addition, two inter-disciplinary roundtables were held on Building World Class Educational Institutions in Partnership with the Private Sector, and Strengthening Employability and Entrepreneurship.

At each roundtable, the two co-chairs presented the context and highlighted potential prospects for Indo-French cooperation in the chosen theme, before launching the discussion. The special experts from academia and industry provided their technical inputs in the domain.

Participants based their discussions on the recommendations from the Future Tour that was held in January and February 2018 in preparation for the Knowledge Summit (cf. infra). Outcomes from the Knowledge Summit roundtables were drafted by the Co-Chairs and are presented in the section below. They will guide Indo-French cooperation in education and research for the next five years.

This list of participants of each roundtable is presented in the Annexure section.

KEY TAKEAWAYS FROM THE ROUNDTABLES

- Create new joint centres of excellence / laboratories.
- Strengthen the link between academia and industry.
- Develop awareness and knowledge of both country's higher education and research systems.
- Develop experiential learning.
- Promote skill development and capacity-building among young students and researchers.
- Develop mobility support for double diplomas in masters and joint PhDs.
- Analyse the legal framework for public-private partnerships to include training and education programs.

SMART CITIES – ELECTRIC MOBILITY / URBANISM

Co-Chairs:



Prof. Yves Poilane

*Director,
Télécom ParisTech*

Prof. Yves Poilane has a long experience in various telecommunication trades and a good knowledge of the higher education sector. After several operational positions at France Telecom, he became Director of Development and Deputy Director of Télécom Bretagne (1990), director of Orange TV (2004), territorial director Île-de-France of France Telecom, then Director of Telecom ParisTech (2007).



Prof. Gitakrishnan Ramadurai

*Assistant Professor,
IIT Madras*

Dr. Gitakrishnan Ramadurai is an Assistant Professor (Transportation Engineering Division) at Indian Institute of Technology, Madras. He completed his B.Tech. (Civil Engineering) from Indian Institute of Technology, Roorkee. His research interests are Dynamic Traffic Assignment; Transportation Network Modelling; Intelligent Transportation Systems; Pedestrian Safety..

Special Expert:



Prof. Utpal Sharma

*Director, Institute of Architecture,
Nirma University*

Prof. Utpal Sharma is Director of the Institute of Architecture, Nirma University, Ahmedabad. He is an academic and an eminent professional in the fields of Urban & Regional Planning and Architecture. He is an Architect and Urban Planner with 30 years of experience in the field of Architecture, Urban Planning, Urban Design and Housing.

Companies:



Mr. Maneesh Varma

Engie

Mr. Maneesh Varma is Senior Vice-President at Engie, India. He has developed a project to promote public transport to convert car users to shared public vehicles to counter congestion and pollution in major metros of India and France.



Kanwaljeet Kukreja

Schneider Electric

Kanwaljeet Kukreja is presently working with Schneider Electric as Head of Smart Cities for the Indian region. In this role he is driving Smart Cities business in PAN India and nearby regions and was a key driver in winning the first Green Field integrated Smart City Project of Naya Raipur as MSI.



Kedar Taskar

Faurecia

Kedar Taskar currently works at Faurecia Emissions Control Technologies India Kedar, Pune Area, India as a Director in purchasing. After studying at Welingkar Institute of Management, he worked in companies such as Knorr-Bremse, L&T John Deere.

THEMATIC CONTEXT IN FRANCE AND INDIA

Reducing traffic congestion and minimizing pollution and greenhouse gas emission is a major issue for France, especially the largest French cities (Paris, Lyon, Marseille, Lille....). France has key academic institutions working on this subject, such as IFSTTAR as a national research organization and Ecole des Ponts ParisTech, UTC, Mines and Telecom ParisTech as higher education institutions. France also has world class companies in this field such as car manufacturers, transportation operating companies, utilities companies.

A key challenge for India is to manage the mobility of people effectively in cities. E-vehicles, intelligent traffic management system, connectivity and use of public transport could play a major role in addressing the issues in urban cities. India also launched a Smart City Mission in 2015 that focuses on creating a sustainable and inclusive development of 100 cities in India.

KEY OUTCOMES OF THE ROUNDTABLE SESSION

The recommendation highlighted that developing an Indo-French Center for Smart Cities, as a multi-institutional and interdisciplinary center would be useful in capacity-building related to smart mobility. There is need for knowledge transfer e.g: learning from the French urban governance system to help develop and professionalize Indian professionals involved in urban planning and city management. Introducing Indo-French online courses on smart cities development was also proposed.

REQUIREMENT(S) TO BE MET IN THE SHORT OR LONG TERM

It is required to facilitate the collaborations between Indian and French towns and academic institutions to work in the field of electric mobility and urban planning focusing on public transport, integration of public spaces, urban design framework, urban redevelopment, etc. to create better cities for tomorrow.

IMPLEMENTATION PROCESS/ MOBILIZATION OF FINANCIAL RESOURCES

All efforts should be made to allocate sufficient financial resources to develop an Indo-French center for smart cities, which could be led by VJTI Mumbai. The necessary measures should be taken to support French experts in urban governance for training sessions in India.

INSTITUTIONAL ARRANGEMENTS (PUBLIC-PRIVATE)

Part of the funding could come from French private companies as an investment for future Indian contracts.

CONCLUSION/WAY FORWARD

The idea should be to develop joint programs to share the French expertise and know-how on electric mobility, energy storage, urban heritage planning, conservation and management through partnerships in academia and practice.

AERONAUTICS & AEROSPACE

Co-Chairs:



Prof. Olivier Pironneau

*Professor,
Université Pierre et Marie Curie*

Prof. Olivier Pironneau is Professor of numerical analysis at the University Pierre and Marie Curie since 1985. Specialist in computational mechanical science, Olivier Pironneau has covered many facets, from mechanical aspects to computer aspects through mathematical analysis, numerical analysis and optimization.



Prof. Rathish Kumar

IIT Kanpur

Prof. Rathish Kumar is Dean of international relation affairs at IIT Kanpur. His research interests are Parallel Computing, Numerical Methods for PDEs, Computational Fluid Dynamics, Finite Element Analysis, Computational Biomechanics, Porous Media.

Special Expert:



Dr. Coumar Oudea

Ariane Group

Dr. Coumar Oudea is Director of Academic Operations-Partnerships in Research-Technology. Ariane Group develops and delivers innovative and competitive solutions for civil and military space launcher systems, with expertise in the most advanced propulsion technologies.

Companies:



Jitendra Singh

Safran

Mr. Jitendra Singh, Director & FTE, SAFRAN Helicopter Engines from Bangalore presented his expertise on 'Flight Testing of Space Vehicles' and the vital role being played by SAFRAN Group in Indian Aviation & Space vehicles. Being a Flight Test Engineer, he also shared his flight test experiences through videos. He also discussed the scope of Aerospace Engineering students in SAFRAN Group.



Mr. Damodaran Subramanian

Sr. Vice President, Safran

Mr. Damodaran Subramanian is an accomplished executive management professional with comprehensive leadership experience in "Glocal" organizations. He has 20 Years of Engineering experience in the Design, Manufacturing and Validation in the Domains of Transportation (Heavy Automobiles, Cars and Aerospace).

THEMATIC CONTEXT IN FRANCE AND INDIA

Basic research in fluid dynamics, composite material, electronics such as antennas, has been the object of Indo-French cooperation at the academic level for a long time. Several huge industrial contracts require industrial cooperation with training of personnel, exchange of common tools and the building of manufacturing of high-tech objects.

The current increase in interest towards access to aerospace market was enabled by light materials, COTS technologies and miniaturization trends in the IT industry. The emergence of these new technologies has allowed new actors in space, SME's and start-up to develop smaller and more cost-effective micro launchers and micro/nano satellites to perform the dedicated national missions.

KEY OUTCOMES OF THE ROUNDTABLE SESSION

The participants at the round-table expressed a desire for a steering committee for aerospace in the model of CNES-ISRO involving DRDO-DGA to alleviate defence problems in the exchanges. Among the important basic research programs, other equally important programs on 1) Smart/composite/nano/material 2) Embedded control and big-data 3) Flight Safety and 4) Management problems, skills and training, exchanges etc. were also identified. In addition, large Bilateral National Programs on Nano-satellites, Aerospace for urban to urban transportation, High altitude platform should also be created.

REQUIREMENT(S) TO BE MET IN THE SHORT OR LONG TERM

India and France should consider creating

working groups in three sectors: Aeronautics, Space and Defence for a common road-map at strategic and technical levels. At the strategic level, for aerospace GIFAS and SIDM, for space CNES and ISRO and for Defense DGA and DRDO could be considered to define modalities and a working method. At the technical level, three French Aerospace regional clusters (ASTech, Aerospace valley and SAFE) and Indian regional clusters can cooperate for bilateral projects. It includes technology transfer, intellectual property and export control.

IMPLEMENTATION PROCESS/ MOBILIZATION OF FINANCIAL RESOURCES

Governments of both countries should consider mechanisms for efficient mobility and trainee programs with universities, SME's and industries with both countries and organizing small seminars on the topics listed above.

INSTITUTIONAL ARRANGEMENTS (PUBLIC-PRIVATE)

These should be a provision to discuss offsets with Indian Government departments or agencies that could enhance scientific cooperation.

CONCLUSION/WAY FORWARD

The current situation is unique for bilateral cooperation in aerospace all the way from basic research to manufacturing. In order to be competitive, bilateral national programs should be launched on artificial intelligence, big data, smart and nano-materials, advanced composites, polymers, chemicals, nanotechnologies and manufacturing technologies for aerospace applications. Joined with increased students exchanges, it could be a real success story.

AGRONOMY & FOOD PROCESSING

Co-Chairs:



Dr. P. Mauguin

*President and CEO,
INRA*

Before becoming CEO of the National Institute for Agricultural Research, Dr. Philippe Mauguin was Director of the Cabinet of Stéphane Le Foll, Minister for Agriculture, the Food Industry and Forestry. He is an agricultural engineer (Institut National Agronomique Paris-Grignon, now AgroParisTech) and an engineer in the Corps of Rural Engineering, Water and Forests, specialising in the socio-economics of innovation (Ecole des Mines de Paris).

Companies:



Mr. Antoine Buisson

Soufflet

Antoine Buisson is a manager with hands-on international experience in value chain development and business development in the agro-industry. His six-year experience with private companies and international organizations shows proven success in setting up business and advisory projects, strategic planning and analysis, sales development, operations and stakeholder management, and team management.



G. Sohani, President

*President, BAIF Development
Research Foundation*

Shri Girish Sohani is President and Managing Trustee of BAIF Development Research Foundation. He has been associated with BAIF since 30 years and has been involved in promotion of FPOs for agri-business.

Special Expert:



Dr. Chindi Vasudevappa

*Vice Chancellor,
NIFTEM*

Dr. Chindi Vasudevappa is Vice Chancellor of National Institute of Food Technology Entrepreneurship & Management (NIFTEM), Sonapat, Harayana. NIFTEM is an institution setup to conduct cutting edge research and impart world class education in innovative and market-oriented areas related to Food Processing Industries.



Dr. Lopamudra Priyadarshini

Sonalika Group

Dr. Lopamudra Priyadarshini is a corporate management professional with a dream for Sustainable Social Development, having over 20 years of experience in various fields and sectors across the globe. An individual with cross-industry experience of working with top notch firms of international repute.

THEMATIC CONTEXT IN FRANCE AND INDIA

French priorities for research under this theme were defined during the National Convention on food and agriculture (Sept-Dec 2017). They encompass five elements: i) upstream interdisciplinary research; ii) transition of agricultural systems to agro-ecology; iii) healthy and sustainable food systems; iv) circular bio-economy; v) big data (open science) and digital technologies.

Agricultural research has helped to increase productivity, improve food security and reduce food prices in India. However, agriculture is now facing complex challenges of declining factor productivity, degrading soil and water resources, rising food and energy prices, and increasing frequency of extreme climatic events.

KEY OUTCOMES OF THE ROUNDTABLE SESSION

Develop cooperation in Agro-ecology, soil & water conservation and restoration; diversification of crops, agro-forestry, indigenous dairy breeds, sustainable and resilient food systems; agrobiodiversity and organic systems, improved value chains, food safety and nutritional security. Its implementation should involve farmers, industries and governments, as well as consumers & NGOs.

In order to make progress, living laboratories aiming at climate-smart and nutrition-sensitive food systems could be developed through a few regional pilots supported by Indian-French collaboration in research, higher education and innovation (e.g. in technologies, agricultural and food systems, socio-economics).

REQUIREMENT(S) TO BE MET IN THE SHORT OR LONG TERM

Launching at least one pilot living lab supported by Indian-French collaborations while focusing on

a district or a state in India. This living lab could develop foresight studies for agriculture, environment and food, integrated assessments using coupled biophysical and socio-economic models.

IMPLEMENTATION PROCESS/ MOBILIZATION OF FINANCIAL RESOURCES

The implementation process could start by launching an interdisciplinary Indo-French project to be submitted to CEFIPRA e.g. on advances in spatial simulation models. Research funding opportunities will be identified both in France and in India and complementary projects could be submitted to international and bilateral donors (e.g. World Bank, Foundations, French Agency for Development).

INSTITUTIONAL ARRANGEMENTS (PUBLIC-PRIVATE)

Institutional arrangements will be tested for the development of the living lab project involving, for instance, village, district & state authorities in the region of the project, as well as farmer's organizations, knowledge transfer centres, etc. Moreover, public-private partnership will be explored especially with French companies developing agri-food activities in India, as well as Indian companies doing business in France.

CONCLUSION/WAY FORWARD

To consolidate multiple collaborations between India and France in the agriculture and food sector, it is now required to develop a systemic thinking and to engage innovation with support of stakeholders. In France, four living labs (TIGA, within the investment programs of the future PIA) dealing with agri-food innovation were selected by the government. To support a transition towards climate-smart and nutrition-sensitive agriculture in India, the development of a pilot living lab underpinned by Indo-French transdisciplinary research, was seen by the round table as the way forward.

BUILDING WORLD CLASS EDUCATIONAL INSTITUTIONS IN PARTNERSHIP WITH THE PRIVATE SECTOR

Co-Chairs:



Prof. Patrick Levy

*Prof. Patrick Levy, President,
Université Grenoble-Alpes*

Prof. Patrick Lévy has chaired the Université Grenoble Alpes Community (ComUE), the Joseph Fourier University as well as the Grenoble Alpes University Foundation. Since 2016, he has been coordinating the "University of Grenoble Alpes University of Innovation" (IDEX) initiative, which aims to create a world-class university, integrated and equipped with a strong national and international influence.

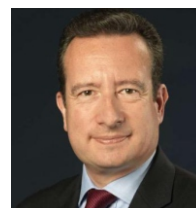


Prof. Rajender S. Sangwan

*Director,
AcSIR*

Prof. Rajender Singh Sangwan is Director of Academy of Scientific & Innovative Research. He was the founder and Chief Executive Officer of Center of Innovative and Applied Bioprocessing (CIAB), Mohali. His research interests include bioresource processing, food and nutraceuticals, specialty biogenic chemicals, medicinal and aromatic plants/products.

Special Expert:



Mr. Christopher Cripps

*Mr. Christopher Cripps, Director of Intl.
Relations, Université Paris Sciences & Lettres*

Mr. Christopher Cripps is an MBA graduate from Henley Business School in the UK. He was the Director of International Relations at École Centrale Paris from September 2007 to January 2015, before becoming CentraleSupélec's Director of International Development in February 2015. He was nominated Director of International Relations at Université Paris Sciences & Lettres in October 2015.

Companies:



Dr. Jean Chazelas

Thales Group

Dr. Jean Chazelas is the Scientific Director in Thales DMS (Defence Mission Systems) Division. He has been involved in numerous European and International projects and contracts in the field of Microwaves, Photonics and Nanotechnologies.



Mr. Srinivas Sambandam

Galaxy Educational Consultants

Mr. Srinivas Sambandam counsels students and guides them to reach their dream destination of Higher Education. He is a market leader for French Education in India. He has signed MoUs with some of the leading public and private institutions in France.

THEMATIC CONTEXT IN FRANCE AND INDIA

Over the past few years, France has worked to reform its higher education and research system and promoted fusions between universities, Grandes Ecoles and research organizations. The merging was intended to improve the position of French institutions in International rankings. The idea is to optimize the performance of research, innovation and training in French higher education system.

The role of Indian higher education in the global context today demands building world-class universities in India. There is an urgent need to redefine curricula, pedagogy approach and internationalization of universities to compete globally.

KEY OUTCOMES OF THE ROUNDTABLE SESSION

The major recommendation delivered by Co-Chairs was to build an Indo-French Educational, Research and Innovation consortium along strategic, scientific and socio-economic challenges including a private sector-academia multidisciplinary approach. Efforts should also be made to improve the visibility of higher education and research offers on both side (India and France) particularly for students and also for faculty and researchers. Humanities and social sciences should be incorporated in all the fields related to societal challenges.

REQUIREMENT(S) TO BE MET IN THE SHORT OR LONG TERM

Enhancing joint bilateral degrees, internship platforms, vocational exercises and student

entrepreneurship i.e. through 24-hour challenge entrepreneurship competitions, by Indo-French student teams and/or for faculty teams. The provision to facilitate administrative procedures between both countries for students, teachers, researchers, visas, short or mid-term stays, possibility of staying after masters or PhD for short periods of employment, etc. should be considered as well.

IMPLEMENTATION PROCESS/ MOBILIZATION OF FINANCIAL RESOURCES

Collaborative approach between French and Indian institutions, provide opportunities to build world-class universities at lower money involvement.

INSTITUTIONAL ARRANGEMENTS (PUBLIC-PRIVATE)

An Indo-French institute could be developed as an ideal vehicle for supporting all these common efforts in promoting cooperation and scientific synergies in close link with social and economic needs, between India and France. There is a need to create small or middle-sized research centres involving French and Indian companies and higher education and research institutions of both countries.

CONCLUSION/WAY FORWARD

There is a significant scope for Indo-French collaboration with regard to building world-class institutions. The strive for excellence and world-class reputation of the higher education institutions should be the key focus, particularly when dealing with scientific and educational cooperation as well as synergies with industry.

ECO-ENERGY

Co-Chairs:



Dr. Jean-François Pinton

*President,
ENS Lyon*

Dr. Jean-François Pinton was appointed as President of ENS Lyon in June 2014. He was also appointed as deputy director for research of the ENS Lyon in 2010. In 2012, he became the director of the National Institute of Physics (INP), CNRS. He is also Director of the Physics Centre at École des Houches.



Dr. Vishal Verma

*Dean,
Delhi Technological University (DTU)*

Dr. Vishal Verma, is a faculty at Department of Electrical Engineering of Delhi Technical University. His areas of interest are Power Electronics, Power Quality, AC -DC Microgrids, Converters for Renewable Energy System and their Integration.

Special Expert:



Dr. Pierre-Jean Ribeyron

*Senior expert,
CEA*

Dr. Pierre-Jean Ribeyron is a Strategy and industrial program manager, Solar Technologies Department at CEA-INES (French Alternative Energies and Atomic Energy Commission). The institute is dedicated to all the technologies involved in Solar energy. From silicon material, cells to modules and systems up to building integration.

Companies:



Ms. Karin Bony-Merad

Société Générale India

Ms. Karin Bony-Merad is Director of Infrastructure & Power sector at Société Générale Corporate and Investment Banking, India. She is an ex-alumni of Institut d'Études Politiques de Paris and Ecole Supérieure de Commerce de Paris (ESCP Europe)



Mr. Anurag Garg

Schneider Electric

Mr. Anurag Garg is Vice President of Solar Business at Schneider Electric. His specialties are Strong P&L Mgmt, Strategy & Business Development, Business Finance, Communication, Visionary, innovate to better manage/improve and do things differently.



Mr. Laurent Meurette

Vicat

Mr. Laurent Meurette is a manager with 18 years of international experience running plants and production facilities. Currently, he is a Chief Operating Officer at Kalburgi Cement, a subsidiary of Vicat in India.

THEMATIC CONTEXT IN FRANCE AND INDIA

Both France and India have played a key role at the international level in the fight against climate change and the promotion of renewable energies with the Paris Agreement of 2015 and the launch of the International Solar Alliance in 2018. Renewable energies are becoming more and more competitive, to such an extent that the global energy transition needed to overcome climate change has to be cost-competitive and ecologically responsible. The overall context of energy transition and climate change issues is a unique chance for India and France to cooperate on this subject.

KEY OUTCOMES OF THE ROUNDTABLE SESSION

France and India have a unique chance to collaborate on various subjects such as solar photovoltaics, hydrogen, biomass, hydroelectricity, solar mobility etc. There is a need of a global and collective effort to increase the deployment of renewable energy. Governments should play a fundamental role in supporting these form of cooperations where India and France can share lessons and best practices in deployment of technologies. Local production of technologies such as grid infrastructures, electric vehicles that are adapted to local needs should also be encouraged.

REQUIREMENT(S) TO BE MET IN THE SHORT OR LONG TERM

There is an urgent need to strengthen research and development, build local skills

and mobilize funding through Indo-French collaborations.

IMPLEMENTATION PROCESS/ MOBILIZATION OF FINANCIAL RESOURCES

Green bonds and long term financing models should be supported to ensure the effective implementation of renewable energy technologies. Other incentives such as Mission Innovation programmes and bottom-up funding mechanisms should also be explored.

INSTITUTIONAL ARRANGEMENTS (PUBLIC-PRIVATE)

India and France have a strong will to accelerate energy transition through new financing means thanks to the International Solar Alliance initiative. On the other hand, this transition will need educated people and advanced technologies in which France and India can cooperate strongly. This can be done through various channels such as education (internship, PhD, postdoc exchange), training, transfer of technology linked with industrial initiatives.

CONCLUSION/WAY FORWARD

In order to maximise efficiency, universities and research centres that focus on renewable energy technologies should be supported for research and development through governance mechanisms.

MATHEMATICS & INFORMATION TECHNOLOGY

Co-Chairs:



Prof. Sylvie Benzoni

*Director,
Institut Henri Poincaré*

Prof. Sylvie Benzoni-Gavage is a Professor of mathematics at Université Claude Bernard Lyon 1, France, and the Director of the Institut Henri Poincaré in Paris. Her main research interests concern hyperbolic partial differential equations, surface waves, dispersive hydrodynamics, phase transitions and traffic flow.



Prof. Anurag Kumar

*Director,
IISc Bangalore*

Prof. Anurag Kumar is director of Indian Institute of Science (IISc Bangalore) and also a professor in the Dept. of Electrical Communication Engineering (ECE). From 1989 to 2003 he was also the Coordinator at IISc of the nationwide Education and Research Network (ERNET) Project, which established the first country-wide packet communication network in India.

Companies:



Mr. Prashant Tiwari

DIMTS

Mr. Prashant Tiwari is associate Vice President at Delhi Integrated Multi Modal Transit Systems (DIMTS).

Special Expert:



Dr. Manoj Singh Gaur

Director, IIT Jammu

Dr. Manoj Singh Gaur is Director at Indian Institute of Technology, Jammu. His current research areas include Computer and Network Security (Network Attack Models and Countermeasures), Mobile Platform Security, Cloud Security, Malware Analysis, Networks-on-Chip, and SDN.



Dr. Manan Suri

Professor, IIT Delhi

Dr. Manan Suri (Member, IEEE) is an Assistant Professor with the Department of Electrical Engineering, Indian Institute of Technology-Delhi (IIT-Delhi). He had worked at NXP Semiconductors, Belgium and CEA-LETI, France. His research interests include Non-Volatile Memory Technology, Unconventional Computing (Machine-Learning/Neuromorphic), and Semiconductor Devices.

THEMATIC CONTEXT IN FRANCE AND INDIA

The French research and higher education system has set up various programs that leverage international mobility of students and researchers and the interactions with companies in the fields linked to mathematics and information technology (laboratoires d'excellence and foundations, in particular Carmin, Amies, FSMP and FMJH; Institut Carnot SMILES, MSO network).

India has a long history of mathematics. Also, India has several successful information technology services companies. Research collaboration between India and France in these areas have been supported by CEFIPRA, and also by direct funding from science funding agencies on either side.

KEY OUTCOMES OF THE ROUNDTABLE SESSION

There is a vast opportunity for India and France to scale the activity in mathematics and computer sciences significantly by undertaking major joint R&D initiatives with a long-lasting impact. Smart City Middleware, Urban Water Management, Artificial Intelligence for Social Good, 5G Technologies, Brain-Inspired Algorithms and Neuromorphic Computing, Data Analytics for Future Healthcare, Cyber Security and High Performance Computing for Large Scale Simulations are few possible initiatives. It is important to encourage greater mobility of students from France to India. The opportunity to share the good practices for the training of school teachers in mathematics and computer science, and for the popularization of these disciplines should be also considered.

REQUIREMENT(S) TO BE MET IN THE SHORT OR LONG TERM

A main requirement is to widen the scope of Indo-French cooperation in mathematics and

information technology. The scientific spectrum of bilateral cooperation should involve further directions: from partial differential equations, algebraic geometry, number theory, combinatorics, complexity, logic and automata theory, verification to machine learning, big data algorithms, geometric group theory, topology, functional analysis, non-commutative algebra, mathematical biology, interactions with physics, computer science, statistics and applied probability. Exchange programs should reach skilful students beyond the most prestigious institutions that are IISc, IITs, IISER, ISI in India, and École normale supérieure and École polytechnique in France. Furthermore, interactions should also be developed with start-ups and not only with large companies.

IMPLEMENTATION PROCESS/ MOBILIZATION OF FINANCIAL RESOURCES

Create a formal bilateral paid internship program for undergraduate students in mathematics. This can also be extended to visits by jointly supervised Indian and French PhD students. The sharing of good practices regarding the training of teachers should rely on French experiences with IREM and the Indian with the centres of excellence for teachers and teaching (funded by MHRD).

INSTITUTIONAL ARRANGEMENTS (PUBLIC-PRIVATE)

We should leverage growing interactions between French companies such as Airbus, Faurecia, Safran, Thalès, and Indian academia.

CONCLUSION/WAY FORWARD

Cooperation requires financial support and a good circulation of information about joint programs, internships, PhD opportunities and post-doc positions. Bilateral programs and networks must be sustained and developed.

NATURAL RESOURCES & BIO-PRODUCTS

Co-Chairs:



Prof. Pierre Van de Weghe

*Vice President,
Université Rennes 1*

Prof. Pierre Van de Weghe is the Vice-President in charge of international relations at Université Rennes 1. His main research focuses on the total synthesis of natural products, medicinal chemistry, and on the development of new methods of synthesis.



Prof. Pradeep Mathur

*Director,
IIT Indore*

Prof. Pradeep Mathur is Director of the Indian Institute of Technology Indore. Dr. Mathur is a recipient of the prestigious Shanti Swarup Bhatnagar Prize in Chemical Sciences. He is a member of various committees of the Government of India's largest funding agency, the Council of Scientific and Industrial Research.

Special Expert:



Prof. K. V. R. Chary

Director, IISER Behrampur

Prof. K. V. R. Chary is Director at IISER Behrampur. His research interests are primarily focused on the investigation of the three-dimensional structures and properties of biological molecules, particularly proteins and nucleic acids, in atomic detail and their correlation with biological activity using NMR technique.

Companies:



Dr. U.V. Babu

The Himalaya Drug Company

Dr. U.V. Babu is Head of Phytochemistry-R&D at The Himalaya Drug Company. Himalaya Health care is a company focusing on herbal healthcare from the origins of Ayurveda. Dr. Babu has been leading the team with more than 80 patents and 35 national and international publications.

THEMATIC CONTEXT IN FRANCE AND INDIA

France has strong knowledge of natural products and is a pioneer in developing natural fragrances from alpine herbs/plants. India has a wealth of traditional knowledge like the Ayurveda wherein the use of herbs for maintenance of health and wellness are well known. In the French context, although agriculture plays a small role in its economy, more than half of its land area is used for farming and about quarter is covered by forests. Hence, there is a need to better utilize its natural resources.

In the Indian context, natural resources and bio products are extremely important areas since about 1/3rd of Indian economy is agriculture based. Also, according to a recent report, India is using its natural resources by about 70% more than its bio capacity. Hence, there is an immediate need to manage and grow here in a sustainable manner.

KEY OUTCOMES OF THE ROUNDTABLE SESSION

The main outcome of this roundtable was highlighting the need of information sharing not just between French and Indian institutes but also between the industries of the two countries as well. This would help increase productivity on both sides.

Skill development in various aspects of natural products, extraction, developing compound library and developing libraries of natural fragrances should be the main focus on collaboration between academia and industry of both India and France.

REQUIREMENT(S) TO BE MET IN THE SHORT OR LONG TERM

The main requirement to be met in the short term is to create a "Chemical Library" of natural products that researchers and technologists both in India and France can access. In the longer term, it is recommended that in the field of natural resources and bio products, a common curriculum for both the Indian and French institutes be created.

IMPLEMENTATION PROCESS/ MOBILIZATION OF FINANCIAL RESOURCES

As a first implementation step, it is recommended to map out the people in-charge (in the area of natural products and bio products) in academia and industry. This would help the two entities to come together, leading to generation of funds for projects relevant to the society.

INSTITUTIONAL ARRANGEMENTS (PUBLIC-PRIVATE)

While public institutions focus on the innovation and development of new products and natural compounds, private companies support research by extending advanced extractions technologies like super critical fluid extraction, steam distillation, organic processes and standards. A public-private partnership could help in scaling up the process and commercialize the products at affordable pricing etc.

CONCLUSION/WAY FORWARD

The objectives of the collaboration and top five areas of agenda should be clearly defined by both countries and for each objective/agenda, the industry partner should be identified by both countries along with academic institutions.

STRENGTHENING EMPLOYABILITY AND ENTREPRENEURSHIP

Co-Chairs:



Mr. Didier Desplanche

*Mr. Didier Desplanche,
Director General, ECAM Lyon*

Mr. Didier Desplanche is Director of ECAM Lyon. In parallel, he is a Director and member of the ITII (Institute of Industrial Engineering Techniques) office in Lyon, Director of the Lyon Urban Truck and Bus Competitiveness Cluster, administrator of the AIP (International Workshop. Lyon) and member of the executive committee of IPL (Polytechnic Institute of Lyon).



Prof. Krishnan Balasubramanian

*Professor,
IIT Madras*

Prof. Krishnan Balasubramanian is a professor at the mechanical engineering department in IIT Madras. His research interests include ultrasonics and acoustics, structural health monitoring, micro and nano imaging, non-destructive evaluation, materials characterization and wave propagation.

Special Expert:



Mr. Paul Livolsi

*Head,
MCF INSTN, CEA*

Mr. Paul Livolsi is deputy chief of radioprotection program and responsible for the teaching of the Master European Radioprotection programme at INSTN, CEA Grenoble. The aim of this course is to provide students with vocational training for all sectors requiring skills to manage radiation protection where sources of ionizing radiation can expose workers and the public to risks that must be controlled.

Companies:



Mr. Bruno Penot

Dassault Aviation

Mr. Bruno Penot is manager and head of the training department at Dassault Aviation in Bordeaux. Every year, Dassault Aviation offers students about 500 placements in all of the company's activities (Engineering departments, Flight tests, Support, Purchases, I.T., etc.) and placements for students preparing for a vocational training qualification and under graduates studying in top schools and universities.



Mr. Vaibhav Chhabra

Maker's Asylum

Mr. Vaibhav Chhabra is a graduate from Boston University, Vaibhav spent 2 years of his career at EyeNetra, a startup from MIT media labs, building portable VR based eye diagnostic devices, before founding the Maker's Asylum fablab in Mumbai. He recently started the STEAM school in collaboration with the French embassy in India, that focuses on project-based learning to work on sustainable development goals.

THEMATIC CONTEXT IN FRANCE AND INDIA

Enhancing students' employability requires structuring the academic offer to suit the national context and the socio-economic needs expected in many evolving fields (aeronautics, energy, automobiles, etc.). The development of apprenticeships makes it possible to ensure that teaching is vocational and driven by learning outcomes, not exclusively by the content provided.

In India, a major challenge is to address the need of a vast population by providing them skills which would make them employable. Several measures have been taken to facilitate the skill development program in India to enhance the employability of growing Indian population.

KEY OUTCOMES OF THE ROUNDTABLE SESSION

It is important to effectively mobilize companies in training programs and create a joint vocational training program involving Indian and French actors (academia and industry) which will be recognized by the Indian government and institutions such as CNAM or CESI in France. There should also be a provision to include training and education programs in the offset obligations of the foreign companies. In addition, a credit transfer mechanism in India similar to ECTS (European Credit Transfer System) should also be considered.

A change in mindset is also necessary to develop entrepreneurship. It needs to be promoted by organising events like a joint Entrepreneurship Forum and innovation festivals, and by experience and methodology sharing at a high school level.

REQUIREMENT(S) TO BE MET IN THE SHORT OR LONG TERM

The taste for entrepreneurship can be increased by developing the propensity in students (PhD/master/engineer...) to create startups/companies through specific training (i.e. business creation, specialised summer schools) or by relying on technology transfer acceleration companies. This would provide, through processes and innovations directly resulting from research, a response to the needs of emerging (often niche) markets, promoting job creation, while increasing talent location.

IMPLEMENTATION PROCESS/ MOBILIZATION OF FINANCIAL RESOURCES

Setting up joint skill development centres and upgrading training institutes under a public-private mode and World Bank results-based financing could be explored.

INSTITUTIONAL ARRANGEMENTS (PUBLIC-PRIVATE)

Relying on the "Training-Research-Enterprise" triptych enables higher education institutions to offer training directly linked to national and international market needs, thus ensuring their students' employability (equatable to pre-employees).

CONCLUSION/WAY FORWARD

Training is an integral part of economic growth as it brings people closer together from academia, industry and economic sectors from urban as well as rural areas. To encourage creativity and innovation among young people, it seems relevant to introduce entrepreneurship in training programs to promote the growth of young entrepreneurs and innovators in India.



THE FUTURE TOUR: PREPARING THE KNOWLEDGE SUMMIT

In the run-up to the Knowledge Summit, in January and February 2018, the Future Tour was organised by the French Institute in India to set in motion a new dynamic of cooperation through preliminary exchanges between Indian and French higher education and research institutions along with private companies. Held under the umbrella of Bonjour India 2017-2018, the Future Tour was a series of seven thematic rendez-vous between scientists, academics, companies and students from India and France, held in Bangalore, Chennai, Hyderabad, Dehradun, and Ahmedabad. The aim was to explore possibilities of collaboration and to strengthen partnerships through education, training, research and innovation in the concerned domains. The Future Tour connected Indian students directly with French companies and

universities, while gathering researchers and scholars for scientific workshops. In addition, it gave enterprises a platform to express their needs.

Each Future Tour consisted of two days of intense exchanges. One day was dedicated for students to meet one-on-one with representatives from French institutions to learn about study opportunities and the French higher education system. Another day brought together scientists, academics, faculties and companies to discuss future partnerships. The joint initiatives and projects that came out during the Future Tour were then elaborated during the Knowledge Summit to establish the roadmap of our bilateral cooperation in higher education, research and innovation for the next five years.

THE FUTURE TOUR SERIES:

AERONAUTICS & AEROSPACE

M.S. Ramaiah University of Applied Sciences, Bangalore
29-30 January 2018

MATHEMATICS & IT

Chennai Mathematical Institute, Chennai
01-02 February 2018

SMART CITIES - CONNECTIVITY & ELECTRIC MOBILITY

Indian Institute of Technology Madras, Chennai
3 & 5 February 2018

AGRONOMY & FOOD PROCESSES

International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Hyderabad
12 February 2018

NATURAL RESOURCES & BIO-PRODUCTS

Indian Institute of Chemical Technology
14 February 2018

ECO - ENERGIES

University of Petroleum and Energy Studies, Dehradun
16 & 17 February 2018

SMART CITIES – URBAN PLANNING, ARCHITECTURE & DESIGN

Institute of Architecture & Planning, Nirma University, Ahmedabad
24-25 February, 2018

JOINT RECOMMENDATIONS AND PROPOSALS FROM THE FUTURE TOUR

AERONAUTICS & AEROSPACE

1. TO DEVELOP RESEARCH ON SATELLITE & TELECOMMUNICATION

Coordinator: Prof. Dominique Baillargeat, XLIM Research institute, Limoges

The objective of the project is to develop research on satellite & telecommunication in the field of satellite new payloads with flexible, high performances and low costs, and satellite-to-satellite and satellite-to-ground network.

It is also important to build new Indo-French collaborations, with Master and PhD student exchanges and permanent researcher exchanges, to build joint research labs on specific research topics and to mobilise funding from

governments and industries.

2. SKILL DEVELOPMENT PROGRAMME FOR BETTER SKILLED WORKFORCE IN AVIATION SECTOR

Coordinator: Dr. Christophe Bénaroya, Toulouse Business School

The main aim of the proposal is to develop a skilled workforce by enhancing student and researchers' mobility in line with national programmes. There is a need to create an institutional mechanism for research development and accreditation with the aerospace industry. Collaborative programmes, academic and research exchange programmes should be explored further.

PARTICIPANTS IN THE ROUNDTABLE:

FRENCH INSTITUTIONS

1. CESI Nanterres
2. École Nationale Supérieure de Mécanique et d'Aérotechnique
3. École Supérieure de Commerce Rennes
4. École Supérieure De Physique Et De Chimie Industrielles De La Ville De Paris
5. Institut Supérieur de l'Aéronautique et de l'Espace
6. École normale supérieure Paris-Saclay
7. Toulouse Business School
8. Université Toulouse
9. XLIM University of Limoges

INDIAN INSTITUTIONS/ENTERPRISES

1. ABB Global Services and Industries Pvt. Ltd.
2. Aeronautical Development Agency
3. Airbus

4. BrahMos Aerospace Pvt. Ltd
5. Dassault Aviation & GIE Rafale
6. Dassault Systemes
7. GE Aviation
8. Hindustan University
9. Indian Institute of Science
10. Indian Institute of Space Science & Technology
11. Indian Institute of Technology Kanpur
12. Indian Institution of Technology Delhi
13. Indian Space Research Organisation
14. National Aerospace Laboratory
15. Planet Aerospace
16. Ramaiah University
17. TCS Research and Innovation
18. Valdel Advanced Technologies, Bangalore
19. VIT Tech University
20. Altran Technologies India Pvt. Ltd.

1. ACTIVITIES CENTRED AROUND MATH CLUBS

Coordinator: Fabrice Rouillier, President, Animath & Research Director, Inria, Paris

The main objective is to foster a joint organisation of Math Clubs with respect to different formats, from simple games to competitions, as suggested in the recent Villani-Torossian report in France to make teaching mathematics more efficient. It would help young people enjoy doing mathematics outside of school, as a regular cultural activity like sports, theatre or music. It would further provide access to maths to underserved groups (gender, regions, social backgrounds, etc.)

2. MATHEMATICS SCHOOL TEACHER NETWORKS AND COLLABORATIONS/RESEARCH IN MATHEMATICS EDUCATION/DIDACTIC

Coordinator: Fabrice Rouillier, President, Animath & Research Director, Inria, Paris and K Subramaniam, Centre Director and Professor, Homi Bhabha Centre for Science Education, Tata Institute of Fundamental Research, Mumbai

The objective is to build teacher capacity and motivation so as to strengthen their teaching of mathematics and prepare them to take up enrichment activities. It also aims enhancing the robustness of theoretical frameworks used in math education research to illuminate differences in the mathematics curriculum in France and India.

3. USE OF INNOVATIVE PEDAGOGIES IN THE AWARDING OF DOUBLE DIPLOMAS (MOOC,

MULTI-COUNTRY STUDENT PROJECTS, REVERSE CLASS...)

Coordinator: Dr. Yann Busnel, IMT Atlantique

The proposal focuses on the use of innovative pedagogies in the awarding of double diplomas (MOOC, multi-country student projects, reverse class...) and make it possible to deploy multi-campus training courses, one in each country. For example, on the flagship themes that could be developed between our two countries, whether in training, research or innovation, we talked about cybersecurity (both information systems and factories), the use of IoT in the development of smart cities, etc.

4. CREATION OF A CNRS JOINT LABORATORY (LIA) IN THE DOMAIN OF ALGEBRAIC COMBINATORICS, IN RELATION WITH PURE MATHEMATICS, COMPUTER SCIENCE AND THEORETICAL PHYSICS

Coordinator: Dr. Xavier Viennot, Emeritus Research Director at CNRS, LaBRI, Bordeaux University, France and Adjunct Professor at IMSc, Chennai, India

This Indo-French LIA would be in the same vein as the LIA LIRCO (<http://lirco.labri.fr>) existing in combinatorics between France and Québec (which is going to finish after 8 fruitful years of cooperation). It would join the main French groups of the present LIA LIRCO and some of the emerging combinatorial groups in India: Time has come to develop a similar cooperation between these French combinatorics teams and various combinatorial groups rising in India.

5. STUDENT MOBILITY/EXCHANGE FOR UNDERGRADUATE, POST-GRADUATE AND GRADUATE STUDENTS

Coordinator: Dr. David Sinnou, UPMC

The aim is to develop undergraduate summer internships after the 3rd year of studies (May-July) for students of IIT, IISER, NIT, ISI and other

such institutions and one semester of an English program in France during the last year with credit transfer. For Post-graduate students, Master 2 in English for one year and one semester of research internship. Mentor from both sides to help transitioning from one system to the other. For graduates, joint supervision for PhD is also proposed.

PARTICIPANTS IN THE ROUNDTABLE:

FRENCH INSTITUTIONS

1. Limoges university
2. Université Paris-Saclay
3. CNRS
4. Paris Diderot University
5. Rennes School of Business
6. Centrale Lille
7. IMT Atlantique
8. U-cergy
9. Chercheur, INRIA
10. Université Pierre et Marie Curie
11. National Institute for Mathematical Sciences and their Interactions (INSMI), CNRS
12. ENS Paris-Saclay
13. Université de Franche-Comté
14. Directrice adjointe de la Fondation Sciences Mathématiques de Paris
15. University of Toulouse
16. Président, ANIMATH
17. LRI
18. ISAE-SUPAERO
19. LaBRI
20. Université de Bordeaux

INDIAN INSTITUTIONS / ENTERPRISES

1. Indian Institute of Technology Indore
2. Azim Premji University
3. Indian Statistical Institute, Kolkata
4. Calcutta University
5. INSOFE
6. Chennai Mathematical Institute
7. Indian Institute of Technology Delhi
8. Indian Institute of Technology Kanpur
9. Indian Statistical Institute Delhi
10. Vishwakarma Institute of Information Technology Pune
11. Tata Institute of Fundamental Research
12. Indian Institute of Technology Bombay
13. Harish-Chandra Research Institute
14. IMSc Chennai
15. Loyola Institute of Business Administration
16. Indian Institute of Science
17. Tata Consultancy Services
18. Tata Institute of Fundamental Research, Centre for Applicable Mathematics (TIFR-CAM)

SMART CITIES - CONNECTIVITY & ELECTRIC MOBILITY

1. INDO-FRENCH CENTRE FOR SMART CITIES: CONNECTIVITY AND SUSTAINABLE MOBILITY (CoSMo)

Coordinator: Dr. Dhiren Patel, Director, Veermata Jijabai Technological Institute (VJTI) Mumbai

The objective is to establish an Indo-French centre for smart cities. It would consist of a CoSMo Lab that would include a state-of-the-art lab with latest data, models, and computational infrastructure for research, training and teaching. It would support best practices from both countries.

2. URBAN MOBILITY AND SUSTAINABLE ELECTRIFICATION IN LARGE URBAN AREAS IN DEVELOPING AND EMERGING ECONOMIES

Coordinator: Dr. Cristina PRONELLO, Professor, Chair Smart Mobility and Territorial Dynamics, Université Technologique de Compiègne, Sorbonne Universités

The objective is to prepare a proposal on "Urban mobility and sustainable electrification in large urban areas in developing and emerging economies". The call asks for bringing together European, Asian (e.g. China, India), CELAC (Community of Latin American and Caribbean States) and African research partners, government agencies and urban authorities, private sector and civil society with relevant expertise and competence within the corresponding cooperation framework and foster participatory engagement in urban electrification in order to reduce air pollution and CO2 emissions. All types of vehicles are considered under this topic (powered 2

wheelers, cars, buses, trucks and LDV).

3. DEVELOPMENT OF ELECTRIC VEHICLE/HYBRID VEHICLES FOR THE ELECTRIC MOBILITY OBJECTIVE AND FIND RENEWABLE SOURCES OF ELECTRICITY FOR THESE VEHICLES.

Coordinator: Dr. Sofen JENA, Lead CFD Analyst, Faurecia Clean Mobility

The aim is to work on the dimensions of development of electric vehicles/hybrid vehicles for the electric mobility objective and also to find renewable sources of electricity for these vehicles.

4. PROMOTION OF INDO-FRENCH NETWORK OF EXCELLENCE VIA JOINT LABORATORIES (LIA) THROUGH COLLABORATIVE CALL FOCUSING ON THE ENERGY STORAGE

Coordinator: Dr. Valérie PRALONG, French National Centre for Scientific Research CNRS

An International Indo-French Associated Laboratory (LIA-CNRS) based on solid state chemistry already exists between IISc Bangalore, IIT Madras and Caen, Bordeaux and Strasbourg. We propose to extend this existing platform to batteries application.

In addition, based on the two Labex EMC3 and RS2E, the two French networks on Materials for Energy, we propose thus to promote an Indo-French network of excellence via this LIA through collaborative call focusing on energy storage.

In order to set up such a network, we propose, first of all, to organize a workshop between all

the partners from France and India working on batteries.

5. E-COURSES ON SMART CITIES DEVELOPMENT

Coordinator: Prof. Rajnikant Patel, Graduate School of Smart Cities Development, Gujarat Technological University

There is a significant scope for India and France to develop e-courses on smart cities. The courses offered at Gujarat Technological University are as follows:

- i. Smart Cities Planning and Development
- ii. Project Management in Smart Cities

iii. Application of Solar Energy for Smart Cities

iv. Green Buildings in Smart Cities

v. Solid waste Management in Smart Cities

vi. Smart Transportation for Smart Cities

vii. Safety, Security and Disaster Management for Smart Citizen

viii. Planning and Development of Smart Village

ix. Smart E-Governance

x. Sustainable Water and Sanitation for Smart Cities

xi. Sustainable Smart Funding for Smart Cities

PARTICIPANTS IN THE ROUNDTABLE:

FRENCH INSTITUTIONS

1. Centrale Lille
2. Laboratoire Ville Mobilité Transport / City Mobility Transport Lab, Ecole des Ponts ParisTech - IFSTTAR - UPEMLV
3. ENSi Caen
4. Laboratoire de recherche AVENUES EA 7284
5. Centrale Nantes
6. Indo-French Chamber of Commerce and Industry

INDIAN INSTITUTIONS / ENTERPRISES

1. Chitkara University
2. Mahindra Ecole Centrale
3. Hindustan University
4. Indian Institute of Technology Madras
5. Gujarat Technological University
6. School of Architecture, HITS
7. Smart City Innovation Center, PEC
8. Indian Institute of Technology Kanpur
9. Veermata Jijabai Technological Institute Mumbai
10. Transportation Engineering Division
11. Indian Institute of Technology Guwahati
12. Societe Generale India
13. Faurecia Clean Mobility Technical Center India
14. Cube

SMART CITIES – URBAN PLANNING, ARCHITECTURE & DESIGN

1. CREATE A NATIONAL KNOWLEDGE PLATFORM ON "SMART ENERGY FOR SMART CITIES"

Coordinator: Prof. Saswat Bandyopadhyay, CEPT University, Department of Planning

Private companies like Citelum, Lumiplan and universities from France and India can come together to create a national knowledge platform on "Smart Energy for Smart Cities", which may be hosted by any Indian university or a Smart City. The following specific actions can be initiated:

- Capacity Building/Training on Smart Energy for Smart cities (through MOHUA Capacity building programmes for Smart Cities);
- Short Term Professional certificate courses on Smart Energy for Smart cities (through Indo-French cooperation)

2. DEVELOPMENT OF JOINT CURRICULUM ON "ENERGY SENSITIVE URBAN PLANNING OR URBAN DESIGN"

Coordinator: Prof. Saswat Bandyopadhyay,

CEPT University, Department of Planning

In most urban planning and design curriculum, the subject of energy, particularly municipal energy components are not dealt with adequate importance. The development of a joint curriculum on "Energy sensitive urban planning or urban design" with pilots tested in Indian planning schools will be a way forward.

3. ESTABLISHMENT OF AN MOU ON STUDENT MOBILITY AND RESEARCH BETWEEN NIRMA UNIVERSITY AND ENSA PARIS AND ENSA NANTES

Coordinator: Prof. Utpal Sharma, Director at Institute of Architecture, Nirma University

Indian cities are growing at a rapid pace and cities now have corridors of development. Transit oriented zones have become hotspots of development which will enhance the urban mobility scenario in India. An ecosystem of research and collaboration should be developed for different modes of transport to find new alternative solutions for issues related to urban mobility.

PARTICIPANTS IN THE ROUNDTABLE:

FRENCH INSTITUTIONS

1. ENPC Ponts Paristech / Echoes.Paris
2. Dpt. Civil Engineering and Urban Planning, INSA Lyon
3. IFSTTAR
4. ENSA Nantes
5. ENSA Toulouse
6. ENSA Paris Marne la Vallée
7. Government of Pondicherry - Smart City mission
8. Engineer ENTPE
9. HCP Design, Planning and Management

INDIAN INSTITUTIONS / ENTERPRISES

1. Institute of Architecture, Nirma University
2. Dassault Systems India
3. Footprints E.A.R.T.H.
4. INI Design Studio, Ahmedabad
5. VNIT Nagpur
6. Maker's Asylum
7. SAI SYSTRA
8. Ahmedabad Municipal Corporation
9. TERI School of Advanced Studies
10. NEERI Nagpur
11. Kesarjan
12. Mahindra Susten
13. Lumiplan
14. CUTM Paralekhemundi
15. Kalol Institute of Architecture and Design
16. Aayojan School of Architecture, Jaipur
17. IIT Kanpur
18. IIT Kharagpur
19. CUTM Bhubaneswar
20. CITELUM India
21. Vidyapeeth College of Architecture, Navi Mumbai
22. IPSA, Rajkot

ECO-ENERGIES

1. MOBILITY OF STUDENTS AND RESEARCHERS. CREATION OF MSC DUAL DEGREES AND JOINT PHDS PROGRAMMES IN ENERGY SECTOR

Coordinator: Prof. Pascal Maussion, Professor and CNRS Researcher - Laplace Laboratory, University of Toulouse

We could think about Masters, PhDs for the research aspect of the cooperation but also an Indo-French consortium with a group of double diplomas as the target objective. In order to create these double diplomas, some Erasmus+ programs could be proposed as starters between a reduced set of highly motivated Indian and French institutions. Several projects should be proposed, each one in its own domain (as defined by the round tables or through the different future tours) and within a few years, depending on the remaining collaborations, some joint laboratories (LIA in French) could be created.

2. INTELLIGENT INTEGRATED MULTI MODE TRANSPORT SYSTEM - PROMOTE PUBLIC TRANSPORT TO CONVERT CAR USERS TO USE SHARED PUBLIC VEHICLES

Coordinator: Mr. Maneesh Varma, Engie

With the objective to counter congestion and pollution in major metros of India and France, Engie has proposed environment-friendly and cost-effective ways to promote an Intelligent Integrated Multi Mode Transport System.

3. TO DEVELOP COST EFFECTIVE AND HIGHLY EFFICIENT FLEXIBLE SOLAR CELLS FOR ENERGY HARVESTING

Coordinator: Dr. Pradeep P, NIT Calicut

The main objective of the collaborative project is to develop cost-effective and highly efficient flexible solar cells for energy harvesting in both countries. The current Silicon solar cells, which recently became cheap due to the scaling up of production, pose a threat to the environment; the disposal of a huge amount of Silicon panels will become a menace and surpass the proportions of even plastic waste disposal.

4. EFFICIENCY AND STABILITY OF PEROVSKITE SOLAR CELL

Coordinator: Dr. Indrajit Mukhopadhyay, Professor, Department of Solar Energy, Pandit Deendayal Petroleum University

We should stress on the efficiency and stability of perovskite solar cell. Cleaning (without using water) and vigil of a large-scale decentralised silicon solar cell based PV system can be another area. High energy density and power density battery pack should also be given prior importance.

5. JOINT MASTER DEGREE PROGRAMMES, INTERNSHIPS AND PHD THESIS AROUND RENEWABLE ENERGY

Coordinator: Prof. Philippe Mandin, Professor of Electrochemical modelling, University of South Brittany

The objective is to propose joint Indo-French master degrees and theses based on renewable energy and internships to students.

PARTICIPANTS IN THE ROUNDTABLE:

FRENCH INSTITUTIONS

1. Université de Lorraine
2. ECAM Lyon
3. Université de Bretagne Sud
4. Université de Pau
5. Université de Toulouse

INDIAN INSTITUTIONS / ENTERPRISES

1. Chitkara University
2. University of Petroleum and Energy Studies
3. Vishwakarma Institute of Information Technology Pune
4. Indian Institute of Technology Delhi
5. Pandit Deendayal Petroleum University
6. Indian Institute of Technology Jammu
7. National Institute of Technology Calicut
8. National Institute of Solar Energy
9. Centre for Renewable Energy & Sustainable Development
10. Sardar Patel Renewable Energy Research Institute (SPRERI)
11. Megger (India) P Limited
12. Societe Generale India
13. Adani Power Ltd.
14. Schneider Electric, India
15. DERC
16. RUDRA ENVIRONMENTAL SOLUTION (INDIA) LTD.
17. ENGIE India
18. Asia Foundation, Dehradun

AGRONOMY & FOOD PROCESSES

1. ADVANCING AGRO-ECOLOGY IN INDIA AND FRANCE FOR SUSTAINABLE DEVELOPMENT AND EQUITY

Coordinator: Dr. Frederic LANDY, French Institute of Pondicherry

In both India and France, the dominant agricultural and food model seems less and less sustainable from an ecological and socio-economic perspective. Both countries now suffer from natural resources depletion; distress conditions of farmers; young people leaving rural areas, etc. Agroecology envisions an opposite project: emphasising local synergies between plant and animal species, bio-geochemical cycles and time to take full advantage of ecosystem functions with better social inclusion and revitalisation as well as mitigation/adaptation to climate change. This project aims at sharing experiences, success stories and failures for establishing innovative agrofood systems.

2. DEVELOPING RESILIENT AND NUTRIENT RICH CROPS THROUGH IMPROVED GENETICS, INCLUDING FOR LOW-INPUT ORGANIC AGRICULTURE

Coordinator: Dr. Kiran Sharma, ICRISAT and Dr. Frédéric Lapeyrie, Executive Secretary of the French Commission for International Agricultural Research (CRAI)

The objective is to develop resilient and nutrient-rich crops through improved genetics such as: i) characterisation and genotyping (sequencing) of crop germplasm, ii) development and use of emerging biotechnical intervention, such as genome editing for complex and intractable traits to break the

yield/quality/nutrition ceiling.

HEALTH BENEFITS OF DIETARY SUPPLEMENTS 3. BASED ON PLANTS, FROM AGRONOMIC TO MEDICAL EXPERTISE

Coordinator: Prof. Catherine Bennetau-Pelissero, Bordeaux University and ICRISAT

ICRISAT (Nutriplus Knowledge program and Smartfood) could be interested in working with Bordeaux University on validation of health benefits of dietary supplements based on plants, from agronomic to medical expertise (traditional Indian knowledge e.g: Ayurveda). There is a market opportunity but regulations need to be worked on (differences between EU and India?) The collaboration is possible starting with respective regulation analysis and also based on quality requirements from the European Union. Scientific approaches can be developed between ICRISAT and Bordeaux University.

4. “DESIGNER FOODS FROM NON-WHEAT CEREALS AND PULSES” FOR ALLERGIC, POPULATION AND INNOVATIONS IN FOOD FORTIFICATION USING NATURAL BIOLOGICAL NUTRIENTS

Coordinator: Dr. P. Prabhasankar, CFTRI and Dr. Catherine Renard, Food Process Division, INRA

The objectives are to: develop products from gluten-free cereals and pulses, eventually mixed cereal and pulses; use the most adapted technologies for their primary processing in flours; identify potential uses for co-products and an optimised formulation of gluten-free products with good acceptability by urban

populations. Fortification is being practiced in both countries using synthetic nutrients especially mineral fortification. Recently CFTRI initiated work on bio-fortification of iron in wheat milled products which can be extended to both Indian and French food products. Similar kind of bio-fortification studies can be beneficial for both countries.

5. CAPACITY TRAINING IN COST-EFFECTIVE, RELIABLE AND RAPID ASSAYS FOR PEANUT ALLERGENS ESTIMATION

Coordinator: Dr Catherine Renard, Food Process Division, INRA, LABERCA, Nantes and Hari Kishan Sudini, ICRISAT

On food safety, India has the framework but the need is in implementation/capacity-building (e.g. in risk assessment – eg GM, mycotoxins, allergens, antibiotics -, dispute analysis). Mycotoxins, especially aflatoxin contamination, remain a significant issue in Indian agricultural commodities. New food risks, e.g. peanut allergies as the direct consumption of peanuts and peanut-based products increased from 5 to 15% in last 5 years. There is an urgent need to develop and validate cost-effective, reliable and rapid assays for peanut allergens estimation, and tracing veterinary products is important.

6. CAPACITY BUILDING PRACTICES ON PACKAGING IN INDIA. SURPLUS FOOD VS STARVATION" UNDER IAS (INDIA AGAINST STARVING). HOW CAN PACKAGING PLAY AN IMPORTANT ROLE?

Coordinator: Prof. Karna BK, Director-Packaging Clinic & Research Institute

India needs frugal processing innovations to improve value addition at the farm gate (low cost post-harvest operations with good quality standards for rural food entrepreneurs SME). France also has expertise in cooperative movement which fits with India's family farming and FPOs support (e.g:- machinery cooperative – CUMA in France – and the GAEC legal status to improve access for Indian smallholdings to machinery and inputs).

7. STUDENT MOBILITY PROGRAMS IN ENGLISH (BACHELOR, MASTER DEGREES AND MOOC)

Coordinator: Dr. Etienne Saur, Agreenium

The Government of Andhra Pradesh would like to start a fruitful bilateral cooperation with the members of Agreenium concerning student mobility, for Indian students to enrol in master programs taught in English, for French students to have research internships in the field, and also to develop scientific assessment and technical analysis of the impact of the public policy in Andhra Pradesh.

8. ENABLING CLIMATE-SMART AGRICULTURAL SYSTEMS AND LANDSCAPES TO BE CO-DESIGNED AND IMPLEMENTABLE AT SCALE IN FRANCE AND INDIA

Coordinator: Dr. Anthony Whitbread, ICRISAT

The impacts of climate change and the necessity to move agricultural systems towards more resilient and sustainable systems that underpin the livelihoods of rural communities and the broader economy are urgent. These often transformational changes around land use, farming systems and the value chains connected

to agricultural industries are complex and interconnected to socio-economic-political issues. The approaches for research and development must necessarily be integrative, multi-disciplinary, multi-scale and at the same time locally relevant. A broader perspective on the role of agriculture in society means that

production as an important driver must be considered along with culture, landscape, ecosystems services and agro-ecological approaches. This project aims to build methodologies which can be used by governments to make climate smart agricultural investments and implementation at a large scale.

PARTICIPANTS IN THE ROUNDTABLE:

FRENCH INSTITUTIONS

1. Agreenium l'Institut agronomique vétérinaire et forestier de France
2. Bureau de Recherches Géologiques et Minières
3. Centre de Sciences Humaines (CSH)
4. ESC Rennes
5. Institut national de la recherche agronomique
6. IRD - Institut de Recherche pour le Développement, Indo-French Cell of Water Science, Indian Institute of Sciences
7. Université Côte d'Azur
8. Université de Bordeaux

INDIAN INSTITUTIONS / ENTERPRISES

1. AGM-Food & Environment Market, Waters India Pvt Ltd.
2. Agri-Business Management Division ICAR
3. Assam Agricultural University
4. Chaudhary Charan Singh Haryana Agricultural University
5. CSIR-Central Food Technological Research Institute
6. French Institute of Pondicherry (IFP)
7. G.B. Pant University of Agriculture & Technology
8. International Crops Research Institute for the Semi-Arid Tropics
9. Mane India Pvt. Ltd.
10. National Institute of Nutrition, Hyderabad
11. Packaging Clinic & Research Institute
12. Prof. Jayashankar Telangana State Agricultural University Saifabad, Hyderabad
13. Professor Jayashankar Telangana State Agricultural University (PJ TSAU)
14. Raagamayuri Mega Food Park
15. Tamil Nadu Agricultural University
16. Tata Institute of Social Sciences

NATURAL RESOURCES & BIO-PRODUCTS

1. UNESCO UNIVERSITY CHAIR PROJECT - TO PROMOTE INTERNATIONAL SCIENTIFIC COOPERATION AND EXCHANGE ACROSS VARIOUS SCIENTIFIC FIELDS RELATED TO PERFUME, THROUGH INTERDISCIPLINARY AND INTERCULTURAL ACTIONS WITH INTERNATIONAL EXPERTS IN THE FLAVOUR AND FRAGRANCE INDUSTRY

Coordinator: Dr. Xavier Fernandez, Serge Antonczak and Ms. Claire Dikidjian, Flavor and Fragrance, Université Côte D'azur

The UNESCO University Chair is a project that incorporates an international team, working in partnership with UNESCO. Our goal is to share interdisciplinary knowledge and practices in the field of perfume science. Globally, the aim is to foster exchange, transmission and training in skills and knowledge related to the perfume industry, starting from a collaborative and innovative project that is currently taking place at the Université Côte d'Azur.

2. DEVELOPMENT OF KNOWLEDGE BASE AND SKILLED FORCE FOR EXPLORING NATURAL AND ORGANIC FRAGRANCES AND FLAVOURS FOR NATURAL BASED COSMETIC AND FOOD INDUSTRY

Coordinator: Dr. Babu U V, Head-Phytochemistry - R&D, The Himalaya Drug Company

The main objective of the project is to develop the knowledge base and skilled force for exploring natural and organic fragrances and flavours for natural based cosmetic and food industry. This exploratory project will identify the unexplored potential of local alpine herbs

and ayurvedic herbs that could lead to development of natural fragrances in the industry. The project will help develop a cross functional skilled force and thereby lead to startups, generating employment.

3. CREATE A CLUSTER OF RESEARCH INSTITUTES AND COMPANIES TO INCREASE CROSS FUNCTIONAL STUDENT EXCHANGES AND PROMOTE SCIENTIFIC RESEARCH WITH SPECIFIC GRANTS TO GENERATE EMPLOYABILITY AND ATTRACT YOUTH

Coordinator: Prof. Catherine Bennetau-Pelissero, Bordeaux University

There is a need to create a cluster of research institutes and companies to increase cross functional student exchanges and promote research with specific grants to generate employability and attract youth. E-learning courses and MOOCs could give more recognition to training based on nutraceutical and fragrance issues at an international level. Beside clusters, the links between academic structures and industries should be reinforced by the organization of scientific meetings at regular intervals in France and in India. This could help in promoting collaborations and student exchanges.

4. TO CREATE A VALUABLE DATABASE OF SUCH HIGH VALUE MOLECULES (HVMS), WHICH IMPLIES THE IDENTIFICATION, THE PRESERVATION AND EVEN THE DEVELOPMENT OF THE NATURAL RAW MATERIALS THEY COME FROM

Coordinator: Dr. Olivier Noel, Assistant Professor, Institute of Molecules and Materials,

Le Mans University and Dr. Serge Antonczak, Professor, Faculty of Sciences, University of Nice Sophia Antipolis

The objective is to gather a collection of high value molecules (HVM) issued of natural resources. Beyond their high interest for

fundamental research, these HVMs could lead to innovative products in healthcare, perfumery, nutrition, energy. The final objective is to create a valuable database of such HVMs, which implies the identification, the preservation and even the development of the natural raw materials they come from.

PARTICIPANTS IN THE ROUNDTABLE:

FRENCH INSTITUTIONS

1. Université Nice Sophia Antipolis
2. ESC Rennes
3. Agreenium l'Institut agronomique vétérinaire et forestier de France
4. INP-ENSIACET
5. l'Université d'Orléans
6. Université Lemans
7. Université de Rennes 1
8. Université Côte d'Azur
9. Université de Tours
10. Chef de Projet – Pôle Arômes et Parfums, INRA
11. Université de Bordeaux

INDIAN INSTITUTIONS / ENTERPRISES

1. CSIR - Indian Institute of Chemical Technology
2. Osmania University
3. Tamil Nadu Agricultural University
4. Indian Institute of Technology Kanpur
5. Central Drug Research Institute (CDRI)
6. Peepal Waste Managers
7. Indian Institute of Science
8. University of Hyderabad
9. IIIST, Trivandrum
10. BenchBio Pvt. Ltd.
11. R&I Advanced Research Function
12. CIPLA
13. Himalaya Drug company
14. Mane India Pvt. Ltd.

ANNEXURE

List of Participants to the Knowledge Summit by Roundtable

Email addresses of all the participants are available on demand at msi@ifindia.in, amg@ifindia.in.

1. SMART CITIES

1. A. Sathidevi, Scientific Officer, CEFIPRA
2. A.K. Goswami, Assistant Professor, IIT Kharagpur
3. Ana Ruiz Bowen, Head - Smart Cities , YNRCEA
4. Anand Pillai, Head - India Operation, Institut Mines Telecom
5. Anne Françoise Zattan, VP RI, University of le réunion
6. Antoine Castel, CEO, Societe General
7. Anurag Kumar, Director, IISc
8. Balkrishna Shetty, Ambassador, Iway
9. Bayad Mohamed, Professor, CNAM
10. Benoit Briand, International Cooperation Officer, Centre Val de Loire
11. Biswajit Ghosh, Professor & Dean, The Neotia University, Kolkata
12. Brijveen Sabhaerwal, Representative India , YNCREA
13. Canda Nazima, Director - International Relations, EPITA
14. David Sinnou, Professor, UMS CNRS
15. Dhiren Patel, Director, VJTI Mumbai
16. Emmanuelle Rombach, Professor - Architecture, ENSA Strasbourg
17. Enrico Chapel, Professor, Ecole Nationale Supérieur d'Architecture, Toulouse
18. Fabrice Dumas, VP RI, University of Toulouse
19. Gilles Coppin, Professor, Lab. STICC CNRS/ IMT Atlantique
20. Gilles Roussel, President, Université Paris-Est
21. Gulshan Kumar Sharma, Associate Professor, B.V.C.O.A Navi Mumbai
22. Indrajit M. , Professor, PDPU Gandhinagar
23. Jan Rembowski, Professor, EURECOM
24. Jill Ferrier, Head - International Relations, ENSA Strasbourg
25. Kailas Karthikeyan, Consultant (Policy) Attorney, Gestalt Strategy Consulting
26. Kanwaljeet Singh Kukreja, Head - Smart Cities, Schneider Electric
27. Karin Bony Merad, Director, Société Générale
28. Kedar Taskar, Deputy Director - Purchasing, Faurecia Clean Mobility
29. Keitano Nakatani, VP - Research, Ecole Navale Supérieur Paris-Saclay
30. Krishnan Balasubramanian, IIT Madras, Professor
31. Laurent Meurette, COO, Vicat -India

32. Mahendra Lal Bapna, Advisor - IIT Jodhpur, IIT Jodhpur
33. Mahesh Conjeevaram, Group leader, Faurecia
34. Mandoul Thierry, Professor, Ecole Nationale Supérieure d'Architecture de Paris-Malaquais
35. Maneesh Varma, Sr. V.P. - Business Development, Engie
36. Marc Renner, Director, INSA Strasbourg
37. Marie Zerah, Researcher, IRD
38. Maxena Fernand, Societe Generale
39. Michel Gourtay, President, TechnoPole Brest
40. Murliprasad Panta, Associate Professor, IIT Kanpur
41. Neila Bhouri, Chargée de Recherche, IFSTTAR
42. Philippe Dume, Adjoint Professor, CNAM
43. Philippe Haik, Responsable Département - Energie & Environment, ECE Paris
44. Pierre Van de Weghe, VP RI, Université de Rennes 1
45. Prabeer Barpanda, Assistant Professor, IISc
46. Prashant Lahoti, Co-Founder, Kalakriti India
47. Praveen Kumar, Associate Professor, IIT Guwahati
48. Rachid Bennacer, Professor, ECAM-EPMI ENS Paris Saclay
49. Rakesh Choudhary, Scientific Associate, CEFIPRA
50. Ramanjit Johal, Director - Research Promotion/ Prof. Of Pub. Adm., Panjab University
51. Ratnil Shrivastava, Assistant Professor, Institute of Architecture & Planning, Nirma University
52. Rekha Lahoti, CEO, Kalakriti India
53. Richa Nagpal, French teacher, Rukmini Devi Public School
54. Saikat Kumar Shome, Scientist, CSIR-CMERI
55. Shashank Kane, Professor, School of Physics D.A.V. University, Indore
56. Soniya Monga, French teacher, Rukmini Devi Public School
57. Sophie Picaret, Director - International Relations, Sup Biotech
58. Sri Ramasubban, CMO, Cube Ventures
59. Srishti Tripathi, Deputy Manager - HR, Faurecia
60. Sunita Sreedharan, Advocate, SKS law Associates
61. Suraj Bagla, Assistant Professor, Chitkara University
62. Swapan Bhattacharya, Former Director ,
63. Sylvain Lassarre, Director Research, IFSTTAR
64. Tamal Chatterjee, Scientist, IIT Bombay
65. Tchanguiz Razban, Professor, Polytech Nantes
66. Uptal Sharma, Director, Nirma University
67. Vijaysekhar Chellabonia, Professor & Dean - Academics, Mahindra Ecole Centrale
68. Vishal Verma, Professor & Dean, Delhi Technological University
69. Xavier Leplae, Professor-Architecture, ENSA Toulouse
70. Y. Nithyanandam, Assistant Professor, TERI School of Advanced Studies
71. Yann Busnel, Professor/ Head - Network & Cyber Dept. , IMT Atlantique

2. AERONAUTICS & AEROSPACE

1. Ajit Nigam, Associate dean - Incubator/ Entrepreneurship, UPES, Dehradun
2. Aprajita Das, Scientific Associate, CEFIPRA
3. Biplab Bhattacharyya, Senior Research Fellow, CSIR - National Physical Laboratory
4. Celine Gerard, CNRS Researcher, Pprime Institute CNRS
5. Chandan Mazumdar, Professor - Computer Science & Engineering, Jadavpur University, Kolkata
6. Claire Lartigue, Professor, ENS Paris Saclay
7. Claude Arpi, Journalist and Author, Auroville
8. Comar Oudea, Head - Operations R&T Partnerships, Ariane Group, France
9. Damodaran Subramanian, Managing Director, SAFRAN Group
10. Didier Marty-Dessos, Vice President - International, University of Toulouse
11. Dinesh Kumar Harursampath, Head - NMCAD Lab, IISc
12. Dominique Baillargeat, Director, XLIM University of Limoges
13. Florence Giraud, Communication Manager, French Confederation of NDT
14. François Champigny, President, French Confederation of NDT
15. Guillaume Garreta, Director - International Relations, Université Paris-Saclay
16. Guven Ugur, Senior Professor & Advisory Council, UPES & UN CSSTEAP
17. J.S. Kishore, Senior Scientist, Indian Space Research Organisation (ISRO)
18. Jérémie Bazin, Head - International Relations, Technopole Brest Iroise
19. Jitendra Singh, Flight test Engineer, Ex. Scientist DRDO
20. Kapil Ahuja, Associate Professor & Dean - International Relations, IIT Indore
21. Kunal Kasariya, Scientist Associate, CEFIPRA
22. Laszlo Toth, Prof./ Director Labex Damas, Lorraine University Metz
23. Mahida Belgrove, Head - International Affairs, University of Limoges
24. Manell Zakharia, Professor, French Naval Academy
25. Mathieu Weiss, Managing Director, CNES India
26. Mukesh Kumar, Director, CEFIPRA
27. N.S. Padmanabhan, Manager, CEFIPRA
28. Neela Nataraj, Head - Mathematics, IIT Bombay
29. Olivier Pironneau, Professor, Académie Sciences
30. Om Prakash Sharma, Professor (Retired), IIT Delhi
31. Pierre Calmon, NDE researcher, CEA List
32. Ratnesh Kumar, Professor, IIT Kanpur
33. Somjeet Biswas, Assistant Professor, IIT Kharagpur
34. Sridhar Ramasubramani, CMO, Astrogate Labs
35. Sumit Darak, Assistant Professor, IIT Delhi
36. Sylvie Benzoni, Director - Institut Henri Poincaré, Université Lyon 1
37. Vinay Dadhwal, Director, Indian Space Science Technology (IIST)

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AGENDA

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PLENARY SESSIONS

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THE FUTURE TOUR

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ANNEXURES

3. AGRONOMY & FOOD PROCESSING

1. A.K. Sinha, Vice President, BAIF, Delhi
2. Abhishek Dwivedi, Sonalika Group,
3. Antoine Buisson, General Manager, Soufflet
4. Appa Rao Podile, Vice Chancellor, University of Hyderabad
5. Arun Kharat, Director - International Collaborations, JNU
6. Ashutosh Upadhyay, Dean Academeics, National Institute of Food Technology Enterprises (NIFTEM), Sonipat
7. Babu U.V., Head - R&D, The Himalaya Drug Company
8. Bruno Dorin, Head - Economics & Development, CSH & CIRAD
9. Christophe Fachon, Director/ VP RI, YNCREA Hauts de France
10. Françoise Moreau - Lalanne, Conseillère Agricole, Embassy of France
11. Gurinder Dua, COO, Indian Citation Index
12. Ségolène Halley des Fontaines, International Delegate, INRA
13. Harpreet Singh, President Kaushalya, K.J.K.S, Uttarakhand
14. Hemant Sagar, CEO , LECOANET Hemant India Pvt. Ltd.
15. Indu Arora, Assistant Scientist, CCS HAU, Hissar
16. Jayant Dera, Professor & OI, Assam Agricultural University (AAU)
17. Jean-François Soussana, Vice Chairman, INRA
18. K.C. Bansal, Area Convenor / Former Director NBPGR (ICAR), TERI Nano-Biotechnology Centre
19. Manash Chatterjee, Founder & Director, Bench Bio Pvt. Ltd.
20. N.S. Murty, Professor, G.B. Pant Univeristy of Agriculture & Technology, Pantnagar
21. Nicolas Gravel, Director, Centre des Sciences Humaines (CSH)
22. Prabhu-Gaunkar Gajanana, In-Charge, Corporate and International relations, IIT Goa
23. Prashant Palakkappan, Principal, S.H. College, Kochi
24. Rakhi Chaturvedi, Associate Dean - Plant Biotech/ Alumni & External relations, IIT Guwahati
25. Raoul Mille, Director - International Relations, IRSTEA
26. Sapna Narula, Associate Professor & Head - Dept. Of Businesss & Sustainaibility, TERI Schoool of Advance Studies
27. Sunil Bhand, Dean - Sponsored Research, BITS, Pilani
28. T.V. Hymavathi, Professor, PJTS Agricultural University
29. Thomas Froehlicher, Director General, Rennes Business School
30. Vanessa Proux, Executive Director, Sup Biotech
31. Yves Lévy, CEO , INSERM

4. BUILDING WORLD CLASS EDUCATIONAL INSTITUTIONS IN PARTNERSHIP WITH THE PRIVATE SECTOR

1. A.K. Srivastava, Vice President, Amity University
2. Abhijit Karkun, Professor, CFFS/ SLL & CS, JNU
3. Aditya Malkani, Managing Partner, Think Education
4. Ajay Gupta, Director, Amity University
5. Alain Beretz, Director General, Ministère Enseignement supérieur, recherche et l'innovation
6. Amritha Chandramouli, India Relations Manager, EPREI Paris
7. Ankit Saneja, Researcher, NII, New Delhi
8. Anne-Lucie Wack, President, Conférences des Grandes Ecoles
9. Ashley Fernandes, Chairman Xavier EMLyon, Xavier - EM Lyon Business School
10. Blanche Dalloz, Deputy Director - International Relations, Polytech Marseille
11. Bruno Penot, Head - Training, Dassault Aviation
12. Charlotte Tripon-Canseliet, Associate Professor, ESPCI/ UPMC/ Thales
13. Chirandeep Patnaik, Director - International Office, INSOFE
14. Christophe Azais, Professor Sociology, CNAM
15. D.L. Sunder, Professor, IIM Indore
16. Dayashankar Maurya, Chairperson - International Relations, T.A. Pai Management Institute, India
17. Didier Desplanche, General Director, ECAM Lyon
18. Divya Arora, Senior Researcher, IIIM - CSIR Jammu
19. Emmanuel Duflos, Director, Centre Lille
20. Fody Fadel, Dean, Amercian Business School of Paris
21. Frédérique Pénilla, President, Campus FLE Association of University Language Centres
22. Hema Somanathan, Dean - R&D, IISER Thiruvananthapuram
23. Irène Tsamados Jacobberger, Professor / Vice President - International Relations, University of Strasbourg
24. Ishana Malkani, Partner, Think Education
25. Jean Chazelas, Director, Thales
26. Jean-François Pinton, President, Ecole Normale Supérieure de Lyon
27. Jérôme Gensel, Vice - Dean International Relations, University of Grenoble Alpes
28. Joseph Moysan, Director - Dept. Mechanical Engineering, Institut Universitaire de technologie, Université Aix-Marseille
29. Julien Henry, RH - India, Dassault Aviation
30. Kim Vu, International Development Manager, CNAM
31. Lalit Kumar Awasthi, Director, National Institute of Technology, Jalandhar
32. Manjesh Kumar Hanawal, Assistant Professor, IIT Bombay
33. Marc Genuyr, Director, ICAM
34. Mariya Jilinskaya, Assistant Professor, O.P. Jindal University
35. Mathias Brieu, Professor, Centre Lille

36. Mathilde Mallet, Head - Asia Unit, Campus France
37. Matthieu Leclerc, Head - Development & Partnership, Ecole navale
38. Maud Le Bars, Head, Rennes School of Business
39. Navita Gupta, Director, Satyakiran School of NDT
40. Navneet Khanna, Coordinator of Mechanical - SEIMENS Centre of Excellence, IITRAM, Ahmedabad
41. Nishit Jain, CEO, EduTotal
42. Partha S. Mallick, Director RAAC, Vellore Institute of Technology
43. Parthick Nedellac, Director General, CNRS
44. Parul Thakkar, India Aquaphonics, CNAM
45. Paul Friedel, President, IMT Atlantique
46. Paul Livolsi, International Relations Officer, INSTN CEA
47. Pradeep G. Siddheshwar, Director - Planning, Monitoring and Evacuation Board, Bangalore University
48. Pradeep Mathur, Director, IIT Indore
49. J. Veeraghavan, Advisor, Apeejay University
50. Raghu A.R Radhalrishnan, Director, Manipal Academy of Higher Education
51. Rajendran Nallaiyan, Director - Centre for International Affairs, Anna University, Chennai
52. Rakesh Mishra, Director, ESIR-EEMB Hyderabad
53. Rakesh Sreedharan, Head - Marketing & Admissions, Mahindra Ecole centrale
54. Ramanjit Johal, Director - research promotions, Panjab University
55. Ranjan Mitter, Principal, The Future Foundation School
56. Sachin Sakhare, Professor & Head - Computer Engineering, VIIT, Pune
57. Sameer Khandekar, Professor, IIT Kanpur
58. Sandrine Lacombe, Vice President, Université Paris Saclay
59. Satish Chinchankar, Dean - Academics, VIIT, Pune
60. Sergei Shikalov, International Programs Officer, Université Paris Saclay
61. Srinivasa Kaveri, Director, CNRS India
62. Srinivas Sambandam, Managing Director, Galaxy Educational Consultants
63. Susana Vogeler Bonnetier, Board & Executive Committee Member, Association of Carnot Institutes
64. V.R. Charu Khandala, Director, IISER, Behrampur
65. Vanya Agrawal, Senior Communications Officer, Thales
66. Vijai Pandey, Director - Research, Lena Research & Consulting LLP
67. M.A.Vijayalakshmi, Director, Vellore Institute of Technology
68. Vimala Veeraraghavan, Emeritus Professor, IGNOU
69. Vinod Madhavan, Dean - Administration, T.A. Pai Management Institute, India
70. Yassine Lakhnech, Directeur exécutif recherche et valorisation, Université Grenoble Alpes

5. ECO-ENERGY

1. Ajay Sehgal, Executive Director, Centre for Renewable and Sustainable Development, VIKALP (Nai Dishayen), New Delhi
2. Antoine Castel, CEO, Societe Generale India
3. Anurag Garg, Vice President Solar (APAC), Schneider Electric India Pvt. Ltd.
4. Avanish K Tiwari, Director, Centre for Renewable and Sustainable Development, VIKALP (Nai Dishayen), New Delhi
5. Bhupesh Arora, Head - Solar Business (India), Schneider Electric India Pvt. Ltd.
6. Biswajit Ghosh, Dean and Professor, The Neotia University, Kolkata
7. Blanche Anne Marie Dubrujeaud Ep Dalloz, Directrice Déléguée aux Relations Internationales, Polytech Marseille (Aix Marseille Université)
8. Changuiz Razban Haghighi, Professeur, Directeur Relations Internationales, Polytech Nantes
9. Deresh Avasthi, Professor and Director, Amity Institute of Nanotechnology, Directorate of Engineering and Technology
10. Dhiren Patel, Director, Veermata Jijabai Technological Institute (VJTI) Mumbai
11. Dinesh Pandya, Prof and Dean Admin, IIT Jammu
12. Dineshkumar Harursampath, Founder-Head, IISc Bangalore
13. Emmanuelle Marie Rombach, Architecte urbaniste Enseignante, Maître Assistant, ENSA-Strasbourg
14. Gaurav Mishra, Director, Sardar Patel Renewable Energy Research Institute (SPRERI), Gujarat
15. Indrajit Mukhopadhyay, Professor and Head, Pandit Deendayal Petroleum University, Gujarat
16. Jérôme Gensel, Vice-Président Relations Internationales, Université Grenoble Alpes
17. Jitendra Singh, Flight Test Engineer & Propulsion Scientist, Ex Scientist DRDO
18. Karin Bony-Merad, Director, Societe Generale India
19. Kedar Taskar, Director - Purchasing, Faurecia Clean Mobility
20. Laurent Meurette, COO, Vicat India
21. Mahesh Conjeevaram, Group Leader, Faurecia Clean Mobility
22. Maneesh Varma, Senior Vice President, Engie
23. Maxence Feraud, Relationship Manager, Societe Generale India
24. Murali Prasad Panta, Associate Professor, IIT Kanpur
25. Nishant Singh, Advocate, Supreme Court
26. Philippe Haïk, Resp. Dept. "Energy & Environnement", ECE Paris
27. Prabeer Barpanda, Professor, Indian Institute of Science Bangalore (IISc)
28. Praveen Kumar, Associate Professor, IIT Guwahati
29. Rohit Sharma, Scientist, Centre for Renewable and Sustainable Development, VIKALP (Nai Dishayen), New Delhi
30. Shashank Kane, Professor, School of Physics, Devi Ahilya University, Indore
31. Som Mondal, Assistant Professor, TERI School of Advanced Studies
32. Soniya Monga, Teacher, Rukmini Devi Public School, Pitam Pura
33. Sophie Picavet, Director of International Affairs, Sup'Biotech Paris
34. Suraj Bagla, Assistant Professor, Department of Mechanical Engineering, Chitkara University, Punjab
35. Tamal Chatterjee, Researcher, IIT Bombay
36. Yassine Lakhnech, Directeur exécutif recherche et valorisation, Université Grenoble Alpes

6. MATHEMATICS & INFORMATION TECHNOLOGY

1. Arkopal K. Goswami, Assistant Professor, IIT Kharagpur
2. Arun Kumar Kaushik, Professor, O. P. Jindal Global University, Sonapat
3. Balkrishna Shetty, Ambassador
4. Chandan Mazumdar, Professor, Jadavpur University, Kolkata
5. Coumar Oudea, Head of R&T Academic Partnerships and Networking, Ariane Group France
6. Damodaran Subramanian, Managing Director, Safran
7. Gilles Coppin, Directeur d'Unité CNRS, IMT ATLANTIQUE
8. Gitakrishnan Ramadurai, Associate Professor, IIT Madras
9. Hema Somanathan, Associate Professor & Associate Dean, Indian Institute of Science Education and Research (IISER), Thiruvannanthapuram
10. J.K. Kishore, Senior Scientist, Indian Space Research Organisation
11. Jan Rembowski, Delegate International, EURECOM
12. Kapil Ahuja, Dean International Relations, IIT Indore
13. Laszlo Toth, Directeur Labex DAMAS, Université de Lorraine
14. M. R. S. Rao, Professor, Jawaharlal Nehru Centre for Advanced Scientific Research
15. Manell Zakharia, Professeur, Ecole Navale
16. Manjesh Kumar Hanawal, Assistant Professor, IIT Bombay
17. Nazima Canda, Directrice des Relations Internationales, EPITA
18. Neila Bhouri, Chargée de recherche, IFSTTAR
19. Nilesh Prakash Gurao, Assistant Professor, IIT Kanpur
20. Olivier Pironneau, Vice-Président Relation Internationales, Académie des Sciences
21. Om Prakash Sharma, Professor (Retired), IIT Delhi
22. Parthanil Roy, Associate Professor, Indian Statistical Institute, Bangalore
23. Paul Friedel, Directeur, IMT ATLANTIQUE
24. Pierre Calmon, Directeur de Recherche, Commissariat aux Energies Alternatives et à l'Energie Atomique
25. Pradeep G. Siddeshwar, Director, Bangalore University
26. Rohini Godbole, Professor, IISc
27. Sachin R. Sakhare, Professor & Head, Vishwakarma Institute of Information Technology (VIIT), Pune
28. Saikat Kumar Shome, Scientist, CSIR-Central Mechanical Engineering Research Institute, West Bengal
29. Shanta Laishram, Associate Professor of Mathematics, Stat Math Unit, Indian Statistical Institute
30. David Sinnou, Professeur des Universités, UMI Relax du CNRS
31. Somjeet Biswas, Assistant Professor, IIT Kharagpur
32. Sri Ramasubban, Cube Venture
33. Sumit Darak, Assistant Professor, IIIT Delhi
34. Sylvain Lassarre, Directeur de recherche émérite, IFSTTAR
35. Vijaysekhar Chellaboina, Professor and Dean of Academics, Mahindra École Centrale
36. Yann Busnel, Responsable du département SRCD (Systèmes réseaux, Cybersécurité, Droit du numérique), IMT Atlantique

7. NATURAL RESOURCES & BIO-PRODUCTS

1. Ankit Saneja, Student (Research Associate), NII New Delhi (CEFIPRA-ESONN Fellow)
2. Anne-Françoise Zattara-Gros, VPRI, Université de La Réunion
3. Anoop Sinha, Vice-President, BAIF Development Research Foundation, Pune
4. Appa Rao Podile, Vice-Chancellor, University of Hyderabad
5. U.V.Babu, Head, The Himalaya Drug Company
6. Biplab Bhattacharyya, Student (Senior Research Fellow), CSIR - National Physical Laboratory, New Delhi
7. Brijveen Sabherwal, Representante - Inde, YNCREA HAUTS DE France - Etablissement ISA LILLE
8. Christophe Fachon, Directeur, YNCREA HAUTS DE France - Etablissement ISA LILLE
9. Divya Arora, Student (Senior Research Fellow), CSIR-IIIM Jammu (CEFIPRA Raman Charpak Fellow)
10. Girish Sohani, President, BAIF Development Research Foundation, Pune
11. Gurinder Dua, COO, India Citation Index
12. Harpreet Singh Sugandh, President, Kaushalya JKS
13. Hemant Sagar, CEO, Lecoanet Hemant India Pvt. Ltd.
14. Irène Tsamados Jacobberger, Vice-Présidente RI, Université de Strasbourg
15. Johnson Prashant Palackappillil, Principal, SACRED HEART COLLEGE - [SH]
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8. STRENGTHENING EMPLOYABILITY & ENTREPRENEURSHIP

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