



2ND EDUCATION WORKING GROUP MEETING AMRITSAR

"Strengthening Research & Promoting Innovation
Through Collaboration"

Dates: 15th - 17th March, 2023

Venue: Khalsa College, Amritsar



वसुधैव कुटुम्बकम्

ONE EARTH • ONE FAMILY • ONE FUTURE

INDIAN INSTITUTE OF TECHNOLOGY ROPAR

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भारत 2023 INDIA



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IIT Ropar, situated in the serene and picturesque landscape of Punjab, is a premier engineering institution of India that has rapidly carved a name for itself in the academic world. With state-of-the-art facilities and world-class faculty, IIT Ropar has been instrumental in shaping the careers of numerous aspiring engineers and technocrats. The institute, with its strong emphasis on innovation and research, has been a beacon of hope for those who seek to push the boundaries of science and technology. Its commitment to academic excellence and holistic development has made it a coveted destination for students from all over the country, and indeed the world.

Nestled amidst the verdant terrain of the Shiwalik range, IIT Ropar is perched upon the banks of the Sutlej river, which flows with vigor and aplomb across the majestic plains of Punjab. The campus is situated at a distance of 50 kilometers from the bustling city of Chandigarh, and is easily accessible through a network of well-maintained roads. The surrounding region is renowned for its fertile soil, which supports a thriving agriculture industry and a rich cultural heritage. Indeed, the location of IIT Ropar is an ode to the bountiful beauty of nature and the resilience of the human spirit.^[2]

The four pillars at the entrance of IIT Ropar serve as a testament to the rich historical legacy of the region. They stand tall, symbolizing the enduring influence of the Indus Valley Civilization and the subsequent dynasties that shaped the course of history in this region. The artifacts depicted on the pillars are a poignant reminder of the ingenuity and creativity of our forefathers. At the same time, the design of the pillars reflects the cutting-edge nature of the education and research that takes place within the walls of IIT Ropar.

The molecular structure on top of the pillars represents the forefront of scientific knowledge and the innovation that is taking place within our institution. Together, these pillars embody the philosophy of IIT Ropar - a fusion of the past and the present, the traditional and the modern. They stand as a symbol of our commitment to building a brighter future, one that is firmly rooted in the wisdom and heritage of our ancestors, while embracing the latest advances in science and technology.





Foreword



“The G20 event, allotted to the IIT by the Ministry of Education, would help in ensuring a roadmap for multi-partner collaborations; to facilitate accessibility and provision of research materials, reducing the gap between industry-academia, thereby discovering and identifying relevant policies and practices for research and innovations. This way would lead to establish long lasting collaborations for equitable quality research in G20 member Nations while following the theme of 'Vasudhaiva Kutumbakam' - One Earth, One Family, One Future.

Further, an exhibition of disruptive technologies and innovations with 100 stalls is also being setup by the IIT as a part of this grand event for delegates. These stalls will encompass startups / technologies from India and G20 member nations to get a feel of global scenario of innovations for the betterment of humankind.”



Rajeev Ahuja
Director of IIT Ropar





Event Schedule

Organizing Institute: Indian Institute of Technology – Ropar (Punjab)

TIME	ACTIVITIES
8:55 HRS	Inauguration and Lighting of the Lamp
09:00 - 09:05 H	Welcome Address : Rajeev Ahuja, Director – IIT Ropar
09:05 - 09:30 H	Research in Emerging and Disruptive Technologies, Industry – 4.0 and SDG – Govindan Rangarajan, Director IISc (based on inputs from G20 and invited countries)
KEYNOTE - 1	
09:35 - 10:00 H	Keynote Address I : Budaraju Srinivasa Murty, Director, IIT Hyderabad
KEYNOTE - 2	
10:05 - 10:30 H	SDG 17 and Importance of Global Cooperation in Achieving Goals – Borhene Chakroun, Director for Policies and Lifelong Learning Systems at UNESCO
10:35 - 11:00 H	Tea Break





TIME	ACTIVITIES
PANEL - I	
11:00 - 11:45 H	<p>Research in Emerging and Disruptive Technologies, Industry – 4.0</p> <p>Chair : Rajeev Ahuja, Director, Indian Institute of Technology Ropar, Punjab</p> <p>Moderator : Anil K Gupta, IIM - Ahmedabad</p> <p>Panelists – 4 speakers from G20/ invited countries</p> <ol style="list-style-type: none"> 1. Australia - Alison Dell (HoD) 2. India - Prof. Raghu Raman 3. UK - Piers Purdy 4. France - Nicolas Gherardi
PANEL - 2	
11:50 - 12:30 H	<p>Research in Sustainable Development Goals</p> <p>Chair: Shalini Bharat, Director, Tata Institute of Social Sciences (TISS), Mumbai</p> <p>Panelists – 5 speakers from G20 / invited countries</p> <ol style="list-style-type: none"> 1. Oman - Bader Ali Al Hinai- General Director of Scientific Research 2. UNICEF - Nicolas Reuge - Head of the UNICEF delegation 3. UAE - Hend Al Tair 4. China - Dayong Yuan 5. South Africa - Alfred Matlhasedi Makgato





TIME	ACTIVITIES
12:30 - 12:45 H	Concluding remarks
	Seminar concludes at 12:45 H Walking to the exhibition = 10 - 15 minutes
13:00 - 13:30 H	Inauguration of the exhibition/delegation walking through different research/innovations
	Exhibition will stay open up to 18:30 H for special invitees
13:30 - 14:45 H	Lunch (with folk fest performances)
19:30 - 21:00 H	An evening with the culture of incredible India Theme (Punjab) / with snacks Welcome Dinner at the Hotel Radisson Blu





Rajeev Ahuja

Director of IIT Ropar

Welcome Address

Time : 09:00-09:05 H

Prof. Rajeev Ahuja, the Director of IIT Ropar, is a Professor of Computational Materials Science primarily researching about batteries, hydrogen storage and production, sensors, and high-pressure physics. He has previously worked as Professor at Uppsala University in Sweden for more than 30 years. With more than 1000 scientific publications in high-ranking international journals accumulating more than 41000 citations.

He is an elected fellow of the Swedish Royal Society of Sciences, the Royal Society of Chemistry, an APS-Fellow of the American Physical Society, an advisory Board member of the Journal of Materials Chemistry and Materials Advances of the Royal Society of Chemistry, and the Associate Editor of NanoEnergy.





Govindan Rangarajan

Director & Professor of Mathematics at the
Indian Institute of Science (IISc) Bangalore

Time : 09:05-09:30 H

Prof. Govindan Rangarajan is an Indian mathematician, academician, and professor, currently serving as the Director and Professor of Mathematics at the Indian Institute of Science (IISc) Bangalore. His research includes nonlinear dynamics, chaos, computational biology, and time series analysis. He was awarded the Homi Bhabha fellowship in 2001 and the Chevalier dans l'Ordre des Palmes académiques (Knight of the Order of Academic Palms) by the French Government in 2006.

He is the J.C. Bose National Fellow for the decade 2011-21. He is currently also the Director of the Indo-French Centre for Applied Mathematics (IFCAM) the first Unités Mixtes Internationales (Joint International Units) of CNRS, France in India





Budaraju Srinivasa Murty

Director of Indian Institute of Technology (IIT)
Hyderabad and IIIT Raichur

Keynote Speaker

Time : 09:35-10:00 H

Prof. Budaraju Srinivasa Murty is an Indian Metallurgical engineer currently serving as the Director of Indian Institute of Technology (IIT) Hyderabad and IIIT Raichur. He has previously acted as the Head of Department at IIT Madras and professor at IIT Kharagpur.

His research interests include nanocrystalline metals and alloys, High entropy alloys, Bulk metallic glass, quasi-crystalline alloys, grain refinement and modification of Al alloys, Al-based composites, in-situ composites, non-equilibrium processing, particulate technologies, thermodynamics and kinetics of phase transformations, transmission electron microscopy and Atom-probe tomography. He was awarded the Shanti Swarup Bhatnagar Prize for Science and Technology, the highest science award in India for 2007 in engineering science.





Borhene Chakroun

Director of Policies & Lifelong Learning Systems
Division at UNESCO-HQ

Keynote Speaker

Time : 10:05-10:30 H

Borhene Chakroun is an engineer and has a PhD in Education Sciences from Bourgogne University in France. Borhene worked, during the 1990s, as trainer, chief trainer, project manager. He has also worked as short-term consultant for the EU, World Bank and other international organisations before coming to the European Training Foundation (ETF) in 2001. At the ETF, Borhene worked as Senior Human Capital Development specialist.

He is now Director of Policies and Lifelong Learning Systems Division at UNESCO-HQ. Borhene conducted a range of policy reviews and skills systems diagnosis in different contexts. He has authored and co-authored various articles and books in the field of skills development and lifelong learning. Much of his most recent work focuses on global trends in reforming education and training systems and global agenda for skills development in the context of the 2030 Sustainable Development Agenda. He is also the coordinator of the Global Education Coalition launched by UNESCO to respond to the COVID-19 crisis.





Anil Kumar Gupta

Founder of Honey Bee Network

Moderator

Time : 11:00-11:45 H

Prof. Anil Kumar Gupta is an Indian scholar in the area of grassroots innovations and the founder of Honey Bee Network. He served as a full-time professor at the Indian Institute of Management (IIM) Ahmedabad for 36 years before retiring in 2017. He was awarded the Padma Shri for his contributions to management education, the Science-in Society Award, Asian Innovation Award and the Pew Conservation Scholar Award.

His research interests include the amalgamation of formal and informal science, ethical issues in conservation, and prosperity of biodiversity. He wrote the book Grassroots Innovation: Minds on the Margin are not Marginal Minds, published by Penguin India, compiling empirical research from his yearly 6000 km Shodh Yatras conducted at IIM Ahmedabad, on ingenious solutions targeting local problems faced by local communities.



**Assistant Secretary, International Partnerships,
Australian Government Department of
Education**

Time : 11:00-11:45 H

Alison has extensive experience across the Australian Public Service, having worked for over 20 years in key policy roles on high profile and complex initiatives. Formerly, she worked in energy policy and supply chains. She has a passion for collaborative approaches and driving excellent relations in international education.





Dean, School of Business, Director, Center for Accreditations, Rankings & Eminence, Director at the Center for Research in Analytics and Technologies for Education at Amrita University

Time : 11:00-11:45 H



Piers Purdy

Senior policy advisor Department for Science, Innovation & Technology (DSIT) & Head of the Department's Engagement for Science & Innovation at G20

Panelist

Time : 11:00-11:45 H

Piers Purdy is a senior policy advisor in the United Kingdom's new Department for Science, Innovation and Technology (DSIT) and is head of the department's engagement for science and innovation at G20. He has worked closely on the UK-India bilateral research and science partnership, as well as on European and other global programmes.





Nicolas Gherardi

Research Director at CNRS
Deputy Counselor for Education, Science &
Culture at Embassy of France to India

Panelist

Time : 11:00-11:45 H

Nicolas Gherardi is graduated from Orléans-Tours University (France), in 1996, and he completed his PhD at Paul Sabatier University, Toulouse (France) in 2000, on applied physics.

During his career, he successively became research assistant at Minneapolis University, USA, post-doctorate and associate professor at Toulouse University, France, then “chargé” and “directeur de recherche” (ie senior scientist) at French National Centre for Scientific Research (French: Centre National de la Recherche Scientifique, CNRS), the French state research organization, and the largest fundamental science agency in Europe, during which he led a team working on Materials and Plasma Processes.

His specialty is the physics and the engineering of plasma discharges, and their applications to surface treatments and deposition of thin films.

During his research, he published more than 70 papers in various peer-reviewed international journals, participated in more than 150 international conferences, including 26 as an invited speaker, and he has 5 patents. He has been president of the plasma section of the French Physical Society from 2009 to 2011.

He is, since 2016, seconded to the French ministry of foreign affairs, first as Attaché for higher education and scientific cooperation based in China until august 2020, and since then as Deputy Counsellor for Education, Science and Culture within the French Embassy in India / deputy director of the French Institute in India.



Shalini Bharat

Director/ Vice-Chancellor of the Tata Institute of Social Sciences (TISS), Mumbai

Time : 11:50-12:30 H

Prof. Shalini Bharat is the Director/ Vice-Chancellor of the Tata Institute of Social Sciences (TISS), Mumbai. Her research has been funded by the Ministry of Health and Family Welfare, Sir Dorabjee Tata Trust, National Institutes of Health (USA), UNAIDS, UNDP, UNFPA, UNIFEM, Bill & Melinda Gates Foundation, World Bank, DfID, IAVI/USAID among others.

She has a wide experience of community-based research using qualitative and mixed methodology research contributing to deeper understanding of a wide range of issues surrounding the health, development and wellbeing of women, youth and vulnerable populations including transgender and homosexual people, people living with HIV, and female sex workers.





Bader Ali Al Hinai

Ministry of Higher Education, Research and Innovation

Panelist

Time : 11:50-12:30 H

Dr. Bader currently works as an acting Director of Scientific Research at the Ministry of Higher Education, Research and Innovation. He also participates in several national committees, including: Head of policy and initiatives team in the project of improving the Global Innovation Index, a member of Research and Innovation Law, a member of national platform Oman Innovates, as well as a member of the scientific Committee for the National Youth Strategy. Dr. Badar obtained his PhD in the field of politics and economics from King's College London, United Kingdom, entitled:

The Role of Energy Diversification Policy in Enhancing the Sustainability of Omani Energy Sector

Dr. Badar also obtained a master's degree in project management from Colorado Technical University and bachelor's degree in the field of scientific business management from the University of Colorado at Boulder. He also obtained many professional certificates in the areas of administrative consulting, project management, and entrepreneurship.

Dr. Badar participated in many national strategic studies, including participating in the Oman Vision 2040, the National Strategy for Scientific Research and Development, the National Industrial Strategy, the Omani strategy for Tourism, the international report on implementing UNESCO's recommendation on science and scientific researchers, and the annual operational plans for the scientific research and innovation sector.

Moreover, Dr. Badar participated in many workshops, seminars and international conferences to present the activities and experiences of scientific research and innovation within and outside the Sultanate of Oman.





Nicolas Reuge

Senior Education Advisor, UNICEF, New York

Panelist

Time : 11:50-12:30 H

Nicolas Reuge is Senior Education Advisor, Team Leader for the Sector Planning, Analytics and Data team at UNICEF HQ in New York. He has 28 years of experience in statistics, analysis and sector planning in the education sector.

Nicolas joined UNICEF in 2009 as Chief of Education in the Mauritania country office; from 2011, he spent 8 years in the UNICEF Regional Office for West and Central Africa, as Regional Education Specialist and then Regional Education Advisor. Outside of UNICEF, he has worked with the French Ministry of Foreign Affairs (secondment to National School of Statistics and applied Economics, Abidjan), IIEP Pole de Dakar, UNESCO, UNESCO institute for Statistics, the World Bank, and as an independent consultant, covering various capacities: teacher/researcher in statistics and econometrics, education policy analyst, and education economist.

Nicolas holds a bachelor's degree in econometrics and a master's degree in finance from the University of Toulouse, France.





Hend Al Tair

Director of Department of Science, Technology
and Scientific Research at Ministry of
Education – UAE

Panelist

Time : 11:50-12:30 H

Ever since she earned her PhD in computer engineering from Khalifa University, Hend AlTair has been devoted to research and innovation. She joined the Ministry of Education and has been assigned to be the Director of Science, Technology and Scientific Research Department.

Dr Altair has been an invited speaker for a number of events in UAE and she has been nominated to be MoE representer for a number of international and national meetings and workshops. Dr Altair is a member of a number of committees and working groups that are related to research planning, measuring and management. Dr Altair obtained number of diplomas: Future Foresight, Public Sector Innovation Diploma and Expert in Intellectual Property.

Dr Altair has a passion for advancing research and linking the higher education institutions with the national priorities and strategies.





Dayong Yuan

Director of the Center for Global Education Governance and Research, deputy secretary-general of the International Education Branch of Chinese Society of Education (CSE).

Panelist

Time : 11:50-12:30 H

Dayong Yuan, deputy dean of the Graduate School of Education, Beijing Foreign Studies University (BFSU), director of the Center for Global Education Governance and Research, deputy secretary-general of the International Education Branch of Chinese Society of Education (CSE). His main research fields include global education and culture, international and comparative education, vocational education, lifelong education, etc. He has presided over and completed more than 30 projects including the National Social Science Fund of China, the Ministry of Education, the Beijing Office for Education Sciences Planning, and the Beijing Municipal Financial Project.

He has published academic monographs such as Comparative Study on Collaborative Innovation and Talents Cultivation in International Higher Education, Research on Context, Path and Form of International Lifelong Learning Policy and Research on the Policy of the Expanding Participation in British Higher Education from the Perspective of Lifelong Learning, translated books such as Learning Cities: Developing Inclusive, Prosperous and Sustainable Urban Communities, and published nearly 100 academic papers in domestic and foreign journals. Besides, he has served on secondment in the Office of the National Leading Group for Educational System Reform and Beijing Municipal Education Commission, and has been the visiting scholar of University of California-Los Angeles (UCLA), University of Cambridge, University of Oxford, University of Bremen, UNESCO Institute for Lifelong Learning (UNESCO-IIL).

He has been invited to attend international academic conferences and give keynote speeches for many times, also a member of the international expert committee of Springer Publishing, a researcher of the Asia-Europe Meeting (ASEM) Education and Research Network, and reviewer for several international journals such as International Review of Education.





Alfred Matlhasedi Makgato

Director: University Institutional Funding

Panelist

Time : 11:50-12:30 H

He is highly astute and enterprising Director and Finance Executive with 11 years of experience working in challenging roles providing bespoke finance solutions and strategies for reputable institutions in the higher education sector as well as providing strategic development and implementation of key projects of national imperative within the university landscape forging strong partnerships and collaboration mostly for the Historically disadvantaged Universities in South Africa with a focus on providing an enabling environment meant for the previously marginalised institutions to fully realised their goals and objectives as part of their holistic growth and development.

He is a modern-day globally enlightened industry solutionist with excellent command of corporate governance, leadership, and board management, he also offers specialist pedigree in the areas of strategic management, project management, collaborations, and partnership, research, funding strategy, financial management, reporting and analysis, budgeting, risk management, process improvement, and performance management.

He holds an undergraduate bachelor's degree in accounting and an Honours Degree in Business Administration and currently pursuing his Certified Chartered Accountancy professional qualification with the Association of Certified Chartered Accountants (ACCA)

Mr Makgato also holds various governance roles and responsibilities as he serves on the Advisory Board of the South African International Maritime Institute (SAIMI), the Health Profession Council of South Africa (HPCSA) and the Audit and Risk Committee of the National Student Financial Aid Scheme (NSFAS)