VAISHWIK BHARATIYA VAIGYANIK (VAIBHAV) SUMMIT

वैश्विक भारतीय वैज्ञानिक सम्मेलन

Global Summit of Overseas and Resident Indian Scientists/Academicians

Summit Schedule

- **Summit inauguration by Hon'ble Prime Minister on 02nd Oct'20**

  - Interaction with Renowned Overseas Indian Scientists/Academicians

- **Subject – wise deliberations from 03rd to 25th Oct'20**

- **Presentation of outcomes on 28th Oct'20**

  - Overseas and Resident Indian Scientists /Academicians, one each from every vertical (18+18)

- **Concluding session on 31st Oct'20 (Sardar Vallabhbhai Patel Jayanti)**

Status Update (30 Sept 2020)

- Panellists confirmed for the Inaugural: **15**

- Total number of Delegates Registered: **2200**

- Total number of Participating Countries: **55**

- Deliberation Sessions: **213**

- Total number of Overseas Panellists: **684**

- Panellists from Countries: **40**

- Total Number of Indian Panellists: **629**

Inaugural Program

Date : 2nd Oct'2020   **Time : 1830 Hrs. IST**   **Total Duration : 75 mins**

- Introduction by **Principle Scientific Advisor** to GoI **– 5 mins**

- Vaibhav: **Movie** – **4 mins**

- Ideas from panelists (**Approx. 15 Overseas Indians**) – **40 mins**

- **Address** by **Hon'ble Prime Minister** – **20 mins**

*PSA will conduct the program

Panelists

S No	Name of the invitee	Profile Picture	Position	Institution	Area of specialization	Country
1	Sridhar Kota		Professor	University of Michigan	Mechanical Engineering	USA
2	Muthupandian Ashokkumar		Assistant Deputy Vice-Chancellor International	University of Melbourne	Sonochemistry	Australia
3	Subramanian Rangan		Professor	INSEAD	Strategy and Management	France
4	Madhukar Pai		Professor, Director and Canada Research Chair	McGill University	Epidemiology, Biostatistics, and Occupational Health	Canada
5	Swadhin K. Behera		Director	Application Laboratory, JAMSTEC	Ocean and Climate Research	Japan

Panelists (Contd.)

S No	Name of the invitee	Profile Picture	Position	Institution	Area of specialization	Country
6	Anupama Prakash		Provost & Vice Chancellor	University of Alaska	Geo-Information Sciences	USA
7	Savita Pahwa		Professor	University of Miami	Microbiology & Immunology	USA
8	N. L. Vijaykumar		Professor	Federal University of São Paulo, UNIFESP	Computer Systems	Brazil
9	Ron (Ranbir) Singh Gupta		President	Gupta Associates Inc.	Architecture	USA
10	Harish Bhaskaran		Professor	University of Oxford	Material Science	UK

Panelists (Contd.)

S No	Name of the invitee	Profile Picture	Position	Institution	Area of specialization	Country
11	Seeram Ramakrishna		Professor	National University of Singapore	Material Science	Singapore
12	Solomon Darwin		Executive Director	Haas School of Business, University of California, Berkeley	Management	USA
13	Dr. Kamalakannan Seralathan		Professor	Jeonbuk National University	Environmental Bio-technology and Microbiology	South Korea
14	Arogyaswami Paulraj		Professor Emeritus	Stanford University	Electrical Engineering	USA
15	Sathamangalam Ranga Iyengar Srinivasa Varadhan		Professor	Courant Institute of Mathematical Sciences, NYU	Mathematics	USA
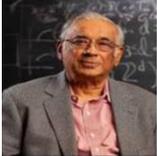
Verticals

1. Quantum Technologies
2. AI and ML
3. Electronics and Semiconductor Technologies
4. Communication Technologies
5. Computational Sciences
6. Data Sciences
7. Photonics
8. Aerospace technologies
9. Materials and Processing Technologies
10. Energy
11. Environmental Sciences
12. Advanced Manufacturing Technologies
13. Earth Sciences
14. Health, Medical Sciences And Biomedical Devices
15. Pharmaceuticals and Bio Technology
16. Agro Economy and Food Security
17. Social Sciences
18. Management

Verticals and Horizontals – 1

Verticals	Horizontals
Quantum Technologies	1. Quantum Communication 2. Quantum Computing 3. Quantum Sensing and Metrology 4. Quantum Materials and Devices
Artificial Intelligence and Machine Learning (AIML)	1. Foundation of AIML 2. AIML and Signals 3. AI for Social Good 4. AI and Robotics
Electronics and Semiconductor Technologies	1. Semiconductor Materials and Process Technologies 2. Semiconductor Devices: Physics and Technology 3. Electronic Circuits and System Design
Communication Technologies	1. Cellular Evolution 5G and Beyond (THz Comm) 2. Communication Technologies for IoT/CPS 3. High Speed Optical Communication - backbone networks 4. Cognitive Technologies for Futuristic Communication

Verticals and Horizontals – 2

Verticals	Horizontals
Computational Sciences	1. High Performance Computing Architectures 2. Computational Atmospheric Sciences 3. Cyber Physical Systems
Data Sciences	1. Data Science Project Management 2. Data Science Infrastructure, Deployment and Hosting 3. Data Privacy and Security 4. Data Science Education 5. Data Science Applications
Photonics	1. Photonic Devices 2. Optical Imaging and Biophotonics 3. Photonic Materials and Sources 4. Nanophotonics 5. Integrated Photonics and Communication
Aerospace Technologies	1. Aerospace Systems and Design 2. Propulsion Technologies 3. Flight Structure and Integrity 4. Modeling and Simulations 5. Unmanned Aerial Systems and Countermeasures

Verticals and Horizontals – 3

Verticals	Horizontals
Materials and Processing Technologies	1. Structural Materials 2. Materials Recycling & Purification 3. Advanced & Functional Materials 4. Catalytic Materials & Processes 5. Computational Materials Science
Energy	1. Future Electricity Systems 2. Sustainable Mobility Technologies 3. Advanced Fossil and Nuclear Technologies 4. Sustainable Future Fuels
Environmental Sciences	1. Air Quality Management 2. Water Quality Management 3. Soil and Waste Management 4. Carbon Sequestration and Biodiversity Conservation 5. Climate Change 6. Roads

Verticals and Horizontals – 4

Verticals	Horizontals
Advanced Manufacturing Technologies	1. Smart Manufacturing, IoT, Digital Manufacturing 2. Additive Manufacturing 3. Precision/ Micro-nano Manufacturing/ Surface Engineering 4. Industrial Machines, Robotics/Automation 5. Speciality Products Manufacturing
Earth Sciences	1. Atmospheric science 2. Polar science 3. Ocean science/technology 4. Geo science/technology
Health Medical and Biomedical Devices	1. Advanced Technologies in Health Care 2. Precision Health 3. Holistic Health 4. Remote and Rural Health - Reaching the unreached
Pharmaceuticals and Bio Technology	1. Biotherapeutics and Biosimilars 2. Industrial Biotechnology 3. Infectious Diseases/ Disease biology 4. Drug Discovery, Repurposing and Drug delivery

Verticals and Horizontals – 5

Verticals	Horizontals
Agro Economy and food Security	1. Precision agriculture 2. Sustainable and Climate smart agriculture 3. Food safety and nutritional security 4. Development of climate resilient livestock germplasm and intervention of modern technology in veterinary therapeutics and farm mechanization 5. Application of nanotechnology in agriculture and food safety 6. Modern fisheries and aquaculture
Social Sciences	1. Behavioural Community Approaches & its impact on Societal Development 2. Societal aspect of Technology Development with cause 3. Socio-Economic aspect of Development 4. Community health & Preventive care
Management	1. Fostering academic collaborations 2. Mechanisms to increase R&D outputs from Indian institutions 3. Business innovation 4. Entrepreneurship for growth 5. Management of New-Age (Knowledge) Organizations 6. Making India R&D center of the world / Making India Center of Practice-Oriented Management Knowledge

Verticals and Champion Institutes

Vertical	Champion Institutes
Quantum Technologies	TIFR, IIT (B), CSIR-NPL
AI and ML	IIT (H), IISc
Electronics and Semiconductor Technologies	IISc, IIT (K), IIT (D), CSIR-CEERI, SCL
Communication Technologies	IIT (M), IIT (KGP), SAMEER
Computational Sciences	IIT (H), IIT (KGP), IISER (Kolkata), CDAC
Data Sciences	IIT (G), IIT (Roorkee), CSIR-4PI, IIIT (H), IIT-BHU
Photonics	IISER (Bhopal), CSIR-CSIO
Aerospace technologies	IIT (K), IISc, CSIR-NAL
Materials and Processing Technologies	IISER (Trivandrum), IIT (M), NML, DMRL, C-MET
Energy	IIT (B), IIT (M), CSIR-CECRI
Environmental Sciences	NEERI, IIT (M), IIT (D), CSIR-NGRI (H)
Advanced Manufacturing Technologies	IIT (M), IIT (B), ARCI, CMTI
Earth Sciences	CSIR-NGRI, IIT (B), IIT (K), IITM, INCOIS, NCPOR, NIOT
Health Medical And Biomedical Devices	AIIMS (Delhi), AIIMS (Rishikesh) NIMHANS, PGI (Chandigarh), CSIR-IGIB, NIBMG
Pharmaceuticals and Bio Technology	IIT (D), BHU, NIPER (Hyderabad), BITS (Pilani), CSIR-IICT, NII
Agro Economy and food Security	IIT (KGP), IARI, CSIR-CFTRI, IVRI, CMFRI, IIHR, CRIDA, CIAE, NABI, NIAB
Social Sciences	JNU
Management	ISB (H), IIM (A), IIM (Shillong)

Verticals Summary – 1

Vertical	Champion Institutes	Horizontals	Sessions	OSI Panelists	Countries	Indian Panelists
Quantum Technologies	TIFR, IIT (B), CSIR-NPL	4	8	25	Oman United Arab Emirates Saudi Arabia Malaysia Thailand Morocco Mexico Italy New Zealand Netherlands Hong Kong Tanzania Indonesia Spain China Kuwait South Africa	35
AI and ML	IIT (H), IISc	4	8	39		TBD
Electronics and Semiconductor Technologies	IISc, IIT (K), IIT (D), CSIR-CEERI, SCL	3	13	17		26
Communication Technologies	IIT (M), IIT (KGP), SAMEER	4	4	10		8
Computational Sciences	IIT (H), IIT (KGP), IISER (Kolkata), CDAC	3	9	65		47
Data Sciences	IIT (G), IIT (Roorkee), CSIR-4PI, IIIT (H), IIT-BHU	5	10	21		TBD
Photonics	IISER (Bhopal), CSIR-CSIO	5	5	38		33
Aerospace technologies	IIT (K), IISc, CSIR-NAL	5	25	41		32
Materials and Processing Technologies	IISER (Trivandrum), IIT (M), NML, DMRL, C-MET	5	10	76		36
Energy	IIT (B), IIT (M), CSIR-CECRI	4	4	36		TBD
Environmental Sciences	NEERI, IIT (M), IIT (D), CSIR-NGRI (H), SERC, IIT(TP)	5	14	27		40

Verticals Summary – 2

Vertical	Champion Institutes	Horizontals	Sessions	OSI Panelists	Countries	Indian Panelists
Advanced Manufacturing Technologies	IIT (M), IIT (B), ARCI, CMTI	5	12	42	USA Canada Singapore United Kingdom Sweden Germany Australia France Japan Austria Ireland Switzerland Norway Netherlands Denmark Russia Botswana	TBD
Earth Sciences	CSIR-NGRI, IIT (B), IIT (K), IITM, INCOIS, NCPOR, NIOT	4	17	105		122
Health, Medical And Biomedical Devices	AIIMS (Delhi), AIIMS (Rishikesh) NIMHANS, PGI (Chandigarh), CSIR-IGIB, NIBMG	4	19	65		102
Pharmaceuticals and Bio Technology	IIT (D), BHU, NIPER (Hyderabad), BITS (Pilani), CSIR-IICT, NII	4	14	59		76
Agro Economy and Food Security	IIT (KGP), IARI, CSIR-CFTRI, IVRI, CMFRI, IIHR, CRIDA, CIAE, NABI, NIAB	6	19	59		42
Social Sciences	JNU	4	16	19		30
Management	ISB (H), IIM (A), IIM (Shillong)	6	6	27		24
Total	**61**	**81**	**213**	**684** (Non Duplicates)	**40**	**629** (Non Duplicates)

Scope of Discussions

- **Research Areas**

  - Current global scenario and future trends

  - Research landscape in India

  - Priority and niche Areas

- **Collaboration Mechanisms**

  - Case studies of collaborative research

  - Today's challenges to collaborate with Indian/overseas researchers

  - Novel policy schemes to promote collaboration

Outcome Preparation

Research Areas and Collaboration Mechanisms

- Session Records
- Horizontal Reports - **81**
  - Specific Research Areas of collaboration with short term and long term goals
  - Mechanisms for Collaboration
- Vertical Reports - **18**
  - Rationalization of all Horizontal Reports
- Summit Report - **1**
- Total Reports - **100**

Thank you