

**Department of Science & Technology
(International Co-operation Division)**

An Indo-Japan (DST-Japan Society for the Promotion of Science) Cooperative Science Programme (IJCSP)-2020 Joint call for Proposals was issued by the Department of Science and Technology (DST), Ministry of Science & Technology, Government of India and Japan Society for the Promotion of Science (JSPS), Japan for inviting joint research projects and workshops carried out by Indian and Japanese researchers on the mutually agreed areas of i) Physical Sciences ii) Chemical Sciences iii) Life Sciences and Agriculture iv) Mathematics and Computational Science v) Astronomy and Earth Science vi) Materials and Engineering vii) COVID-19 related (preventive technologies, Artificial Intelligence applications, Screening and diagnostic testing)

The last date for submitting the proposals was 2nd September 2020. A total of 102 common joint research project proposals and 5 workshop proposals were received against the call. After judicious assessment based on scientific strength, technical aspects, project objectives and national priorities of both the countries, DST and JSPS, have jointly decided to support the following 20 project proposals and 3 workshop proposals. Project coordinators are being informed separately to complete administrative formalities for release of DST grant.

List of Selected Joint Research Projects

CHEMICAL SCIENCES:

S. No.	Title of the Project	Indian PI Name and Institute Details	Japanese PI Name and Institute Details
1.	Circularly Polarized Luminescence As A New Tool For The Early Diagnosis Of Amyloid Formation	Dr. Jatish Kumar Indian Institute Of Science Education And Research Andhra Pradesh	Dr. Takuya Nakashima Nara Institute of Science and Technology, NAIST Nara Japan
2.	Self-Assembled Organo-Gold(I) Molecules and Their Aggregation-Controlled Luminescence in Nano Materials	Prof. Prabu Sankar Ganesan Indian Institute of Technology Hyderabad, Sanga Hyderabad Telangana	Prof. Osamu Tsutsumi Ritsumeikan University Professor of Polymer Materials Chemistry Department of Applied Chemistry, Kusatsu Japan
3.	Ultrafast Laser Spectroscopic Investigation of Dynamics and Microscopic Structure of Deep Eutectic Solvent	Prof. Pratik Sen Indian Institute of Technology Kanpur, Uttar Pradesh	Prof. Keisuke Tominaga Molecular Photoscience Research Center, Department of Chemistry Graduate School of Science Kobe University Kobe, Japan

LIFE SCIENCE & AGRICULTURE:

S. No.	Title of the Project	Indian PI Name and Institute Details	Japanese PI Name and Institute Details
1.	Molecular and biological characterization of novel microbial rhodopsins from <i>Klebsormidium nitens</i> , and application for optogenetics	Prof. Suneel Kateriya Jawaharlal Nehru University, New Delhi	Prof. Hideki Kandori Nagoya Institute of Technology, Tokyo, Japan
2.	Bio-inspired nano-hierarchical architecture of fabrication and maturation of spheroid-based tendon-ligament tissues by Bio-3D printer	Dr. Subha Narayan Rath Indian Institute of Technology Hyderabad, Sanga Reddy, Telangana	Dr. Koichi Nakayama Saga University Center for Regenerative Medicine Research, Faculty of Medicine, Saga University, Japan
3.	Production of Microbial Exopolymeric Substance (EPS) Stabilized Biogenic Selenium Nanoparticles (BioSeNPs) and their (EPS-SeNPs) application as Bioactive Matrices	Prof. N Tejo Prakash School of Energy and Environment, Thapar University Patiala	Prof. Hisaaki Mihara Department of Biotechnology, Ritsumeikan University, Kusatsu, Shiga, Japan
4.	Characterization of Mulberry Silkworm, <i>Bombyx mori</i> L. Mutants for Tolerance to Flacherie Syndrome Through Genome Editing Tools	Dr. Vankadara Sivaprasad Central Sericultural Research & Training Institute, Berhampore West Bengal	Dr. Katsuhiko Ito Department of Science of Biological Production, Graduate School of Agriculture, Tokyo University of Agriculture and Technology, Tokyo, Japan
5.	Expressing herbivore danger signal-associated receptor-like kinase genes, HAKs, in chickpea to mediate resistance to <i>Helicoverpa armigera</i>	Dr. Sumita Acharjee Assam Agricultural University Jorhat, Assam	Dr. Gen Ichiro Arimura Department of Biological Science & Technology, Faculty of Industrial Science & Technology, Tokyo University of Science, Niijuku, Katsushika-ku, Tokyo, Japan

MATHEMATICS & COMPUTATION SCIENCES:

S. No.	Title of the Project	Indian PI Name and Institute Details	Japanese PI Name and Institute Details
1.	Smart Biometrics AI driven Biometric Privacy	Dr. Harkeerat Kaur Indian Institute of Technology Jammu Campus, Jammu	Prof. Isao Echizen National Institute of Informatics, Chiyoda-ku, Tokyo, Japan
2.	3D-Mesh Model Steganography and Secure Communication in a Cloud Manufacturing Environment	Prof. Aparajita Ojha PDPM Indian Institute of Information Technology Design & Manufacturing Jabalpur, Madhya Pradesh	Prof. Yasushi Yamaguchi University of Tokyo Meguro-ku, Tokyo, Japan

MATERIALS & ENGINEERING:

S. No.	Title of the Project	Indian PI Name and Institute Details	Japanese PI Name and Institute Details
1.	Development of Lead-free Perovskite Solar cells with Robust Stability and High Efficiency	Dr. Basudev Pradhan Central University Of Jharkhand, Ranchi Jharkhand	Prof. Tsutomu Miyasaka Toin University of Yokohama, Japan
2.	Detailed FE Simulation of RC Buildings for Seismic Damage Prediction Using a Non-local Plasticity Based Damage Models for Concrete	Dr. Amirtham Rajagopal Indian Institute of Technology, Sangareddy, Hyderabad Telangana	Dr. Takuzo Yamashita National Research Institute for Earth Science and Disaster Resilience, Tsukuba-shi, Ibaraki, Japan
3.	Fingerprinting of point defects in silicon carbide created by energetic particles for their relevance in quantum technologies•	Prof. Shyama Rath University of Delhi, New Delhi	Dr. Shinichiro Sato National Institutes for Quantum and Radiological Science and Technology, Quantum Beam Science Research Directorate, Takasaki Advanced Radiation Research Institute, Gunma, Japan
4.	Orientation mechanism of low band gap uniaxially-oriented polymer semiconductor and its carrier transport characteristics	Prof. Rajiv Prakash Indian Institute Of Technology (BHU), Varanasi, Uttar Pradesh	Prof. Takaaki Manaka Tokyo Institute of Technology, Japan Department of Electrical and Electronic Engineering, Tokyo

			Institute of Technology, Meguro-Ku, Tokyo, Japan
5.	Development of growth process of high quality multicrystalline silicon by experiments, computational simulation and machine learning	Prof. P. Ramasamy , Sri Sivasubramaniya Nadar College of Engineering, Chennai, Tamil Nadu	Prof. Noritaka Usami Nagoya University Furocho, Nagoya, Japan
6.	Design and development of millimeter-wave array antenna for 5G mobile communication	Dr. Saptarshi Ghosh Indian Institute Of Technology Indore, Madhya Pradesh	Prof. Jiro Hirokawa Tokyo Institute of Technology, Meguro-ku, Tokyo , Japan
7.	Investigation on the growth process and defect studies of semiconductor materials for high temperature thermoelectric applications	Dr. M Arivanandhan Anna University, Chennai, Tamil Nadu	Prof. Kozo Fujiwara Tohoku University Sendai, Japan

OTHER AREA FIELDS (PHYSICAL SCIENCES, ASTRONOMY & EARTH SCIENCE, COVID)

S. No	Title of the Project	Indian PI Name and Institute Details	Japanese PI Name and Institute Details
1.	Follow up studies on SARS-CoV-2 recovered patients and Artificial Intelligence an approach towards COVID-19	Dr. Balachandar Vellingiri Bharathiar University, Coimbatore, Tamil Nadu	Dr. Masako Kinoshita National Hospital Organization Utano National Hospital Kyoto, Japan
2.	Unidirectional Crystallization and Nature of Crystal-to-Crystal Transformation in Soft Colloids	Dr. Priti Sundar Mohanty Kalinga Institute of Industrial Technology (KIIT University) Bhubaneswar, Odisha	Prof. Junpei Yamanaka Nagoya City University, Nagoya, Japan
3.	Design and development of nanomaterials based flexible smart proximity sensor for COVID related human detection application	Prof. K. Rajanna Indian Institute Of Science Bangalore, Karnataka	Prof. Hidekuni Takao Kagawa University Kagawa, Japan

List of Selected Joint Research Workshops

MATERIALS & ENGINEERING:

S. No.	Title of the Project	Indian PI Name and Institute Details	Japanese PI Name and Institute Details
1.	Advancement in concentrated photovoltaic systems and its thermal management	Dr. Suresh Sivan National Institute Of Technology, Tiruchirappalli, Tamil Nadu	Dr. Noboru Yamada Nagaoka University of Technology, Japan
2.	Innovative carbon fiber polymer composite structures material, design and application	Dr. Sanjay Rangnath Dhakate National Physical Laboratory New Delhi	Dr. Tomohiro Yokozeki The University of Tokyo Tokyo Japan

MATHEMATICS & COMPUTATIONAL SCIENCES:

S. No.	Title of the Project	Indian PI Name and Institute Details	Japanese PI Name and Institute Details
1.	Spatial Statistics and Spatial Econometrics, Machine Learning, Remote Sensing, Digital Image Processing, Applied Economic Analysis	Dr Gaurav Arora Assistant Professor, Indraprastha Institute of Information Technology, New Delhi	Dr Masayoshi Takahashi Associate Professor, Nagasaki University, Nagasaki City, Japan
