

Department of Higher Education

Minutes of SPARC Apex Committee Meeting held on 30.01.19 at 11.00 AM

The Apex Committee constituted for considering the projects to be sanctioned under the Scheme for Promotion of Academic and Research Collaboration (SPARC) has met under the Chairmanship of Secretary, Higher Education on 30th Jan 2019. The list of participants is enclosed.

2. Professor Partha P. Chakrabarti gave a presentation on the review process of SPARC proposals. In each of the Thrust Areas, there are five or six sub-domains, headed by sub-domain head. In some cases where there are more proposals in any of the sub-domain theme, more than one sub-domain coordinator is engaged. Each proposal was reviewed by two reviewers. The proposals were rated on a 10 point scale. Finally, proposals were categorized as Strong Accept, Accept, Weak Accept and Reject. There were some proposals which were not submitted under the appropriate sub-themes, these have been put under the category of "Suspended", till the Apex Committee takes a decision on these. A total of 1188 proposals were received under SPARC, out of which review on 557 proposals could be completed and are being presented to Apex Committee for decision. Out of 557 proposals, 22 proposals are 'Strong Accept', 121 'Accept', 128 'Weak Accept' and 286 'Reject'. 'Strong Accept' and 'Accept' together constitute a total of 143 proposals.

3. The Committee has considered the proposals and after due examination, decided as follows:

- a) All the 143 'Strong Accept' and 'Accept' proposals have been approved. However, the approval for the two proposals of collaboration with Taiwanese institutions will be communicated after due consultation with MEA.
- b) Of the 'Weak Accept' proposals, those which got 6 and above marks (out of 10) have been considered for approval. Accordingly, 56 Weak Accept proposals that attained 6 and above marks have been approved.
- c) So, in total, 199 proposals have been approved with Rs. 12599.62 Lakhs (list of approved proposals along with allocated budget enclosed).
- d) Out of the 'Reject' category proposals, (6) proposals, which have got 6 or more gradings, have been identified and it was decided to send them back with a request to review them.
- e) It was decided that 36 "Suspended" proposals that could not be assigned to appropriate Thrust Areas by the PIs would be reassigned to the new thrust area for evaluation.

4. National Coordinator has been requested to issue Sanction letter to the PIs of all the approved proposals immediately. Further, the National Coordinator would ask PIs of the approved proposals to send their budget requirement for the period upto 31st March 2019, and for the period upto 31st July 2019. Accordingly, the funds could be released by the National Coordinator based on actual requirements of PIs suiting their schedule of action.

5. It was decided to hold the next SPARC Apex Committee meeting on 28th February 2019, 3.00 PM for the consideration of rest of the proposals. It is expected that all reviews would be completed by then, without fail.

List of Participants:

1. Mr. R. Subrahmanyam, Secretary (Higher Education), MHRD – Chair
2. Dr. N. Saravana Kumar, JS (ICC), MHRD
3. Professor Partha P. Chakrabarti, Director, IIT, Kharagpur
4. Professor Virander S. Chauhan, Chairman, Executive Committee, NAAC
5. Mr. B. N. Reddy, JS (PP&R) MEA
6. Professor Indranil Manna (through VC), IIT, Kharagpur
7. Mr. V.K. Siljo, Director (ICC), MHRD
8. Dr. Praveen Kumar, Scientist – ‘E’, DST
9. Dr. Shailja V. Gupta, Advisor – ‘G’, DBT
10. Dr. Manju Singh, Joint Secretary, UGC
11. Mr. Anil Kumar, Director (Finance) MHRD
12. Dr. S. Vaidhyasubramaniam, Dean, Planning & Development, SASTRA University
13. Professor A. Goswami, Dean, Continuing Education, IIT, Kharagpur
14. Professor S. Sural, Vice Chairman of ERP, IIT, Kharagpur
15. Dr. Anamika, Senior Consultant, MHRD

List of Approved Projects under SPARC (30.01.19):

Thrust Area/Subdomain/Proposal	Number of Proposal	Total SPARC Budget (in Lakhs)
Action-Oriented Research	50	3251.04
Agricultural and Food Sustainability	4	297.82
#1400 [Mahatma Gandhi University-Dr. Nandakumar Kalarikkal] [NORTH CAROLINA STATE UNIVERSITY, United States of America-Dr. K.P. Sandeep] Vachellia nilotica based biocompatible hybrid nanostructured coatings/films for seeds and fruits	1	66.68
#442 [Chaudhary Charan Singh Haryana Agricultural University-Dr. Vinod Goyal] [LAVAL UNIVERSITY, Canada-Prof. Francois Belzile] Genotyping by Sequencing, Genome-wide Association Study, and Genomic Selection Approaches for the Complex Trait like Stress-tolerance and Yield in Soybean	1	93
#522 [Chaudhary Charan Singh Haryana Agricultural University-Dr. Axay Kumar Bhuker] [MASSEY UNIVERSITY, New Zealand-Mr. Craig Robert McGill] Standardization of seed testing procedures and storability for medicinal plants (Moringa and Gokhru)	1	63.24
#594 [Aligarh Muslim University-Dr. Shams Tabrez Khan] [UTRECHT UNIVERSITY, Netherlands-Dr. Alexandre Jousset] Microbial biofortification of crops to solve zinc deficiency in Indian children.	1	74.9
Future of Earth: Green and Renewable Technologies	40	2598.49
#102 [Indian Institute of Technology Indore-Dr. Devendra Laxmanrao Deshmukh] [FRIEDRICH-ALEXANDER-UNIVERSITÄT ERLANGEN-NÜRNBERG, Germany-Dr. Yogeshwar Nath Mishra] Structured Illumination for Turbid and Turbulent Environments (SITTE)	1	81.6
#1031 [Indian Institute of Technology Bombay-Prof. Chetan Singh Solanki] [BOSTON COLLEGE, United States of America-Prof. Praveen Kumar] Attaining and sustaining energy access through decentralised solar systems	1	92.64

#1084 [Indian Institute of Technology Hyderabad-Dr. Kishalay Mitra] [UNIVERSITY OF EXETER, United Kingdom-Prof. Richard Everson] Wind farm layout optimization under uncertainty using wind speed forecasting through probabilistic models and comparison with machine learning algorithms.	1	79.48
#1094 [Indian Institute of Technology Kanpur-Dr. Santanu De] [LUND UNIVERSITY, Sweden-Prof. Jens Holger Klingmann] Lean Premixed Prevaporized Combustion of Diesel and Biofuels in a Laboratory-scale Gas Turbine Combustor	1	48.86
#1217 [PSG College of Technology-Dr. THILAGAVATHI G] [DEAKIN UNIVERSITY, Australia-Dr. Rangam Rajkhowa] Recycling of Textile Industrial Waste as Value added Composite Materials	1	89
#1221 [Pondicherry University-Dr. Jaffar Ali Mohammed] [UNIVERSIDADE FEDERAL DO RIO DE JANEIRO, Brazil-Prof. Donato A. G. Aranda] NOVEL APPROACHES IN BIOFUEL PRODUCTION AND PROCESSING	1	79.56
#1240 [Indian Institute of Technology Delhi-Prof. Dr Dibakar Rakshit] [KYUSHU UNIVERSITY, Japan-Prof. Bidyut Baran Saha] Characterization and testing of the adsorption pairs of HFOs and ammonia with halide salts and functional activated carbon groups for application in adsorption heat pump/ cooling systems.	1	86.88
#1318 [Indian Institute of Technology Delhi-Prof. Sreedevi Upadhyayula] [THE UNIVERSITY OF QUEENSLAND (UQ), Australia-Prof. George Zhao] Bimetallic nanocatalysts supported on nanostructured carbon for production of biofuels and value-added chemicals through a hydrodeoxygenation process	1	59.66
#136 [Indian Institute of Technology Kharagpur-Prof. Nikhil K Singha] [THE UNIVERSITY OF MELBOURNE, Australia-Prof. Greg Guanghua Qiao] Functional Polymers via Ultrasound Assisted Polymerization; A Green Technology	1	57.24
#1374 [Indian Institute of Technology Madras-Prof. Nageswara Rao B] [CONCORDIA UNIVERSITY, Canada-Prof. Ashutosh Bagchi] Development of Inspection and structural health monitoring techniques for solar power plant systems	1	54

#1548 [Indian Institute of Technology Kharagpur-Prof. Ramkrishna Sen] [UNIVERSITY OF PENNSYLVANIA, United States of America-Prof. Warren Seider] Process Intensification and Integration for Efficient CO2 Delivery to Enhance Algal Biomass Production in a Biorefinery Model (Acronym: inSCO2PE)	1	75.48
#265 [Indian Institute of Technology Kharagpur-Dr. Amit Ghosh] [ARIZONA STATE UNIVERSITY, United States of America-Dr. Arul Mozhy Varman] Microbial cell factories for isobutanol production using metabolic engineering	1	47.04
#275 [Indian Institute of Technology Bhubaneswar-Dr. Shantanu Patra] [UNIVERSITY OF DUNDEE, United Kingdom-Dr. Michael Brown] Design and Development of Low-Cost, Easy to Install, Sustainable Foundations for Renewable Energy Devices	1	49.98
#307 [Maulana Azad National Institute of Technology-Prof. ALOK MITTAL] [UNIVERSITY OF ST ANDREWS, United Kingdom-Dr. RICHARD THORNTON BAKER] DESIGN AND EVALUATION OF NANOSTRUCTURED MATERIALS FOR WASTEWATER TREATMENT	1	100.44
#340 [Vellore Institute of Technology-Dr. Srimathi C] [DEAKIN UNIVERSITY, Australia-Dr. Robin Doss] Enabling Smart and Safe Cities through IoT Technologies.	1	74.84
#354 [Indian Institute of Science-Prof. Ravikrishna V Rayavarapu] [CHALMERS UNIVERSITY OF TECHNOLOGY, Sweden-Prof. Bo Leckner] Clean coal technologies for India: Oxy-fuel Circulating Fluidized Bed Combustion of Coal and Biomass	1	59.4
#392 [National Institute of Technology Tiruchirappalli-Dr. Cindrella Louis] [ARIZONA STATE UNIVERSITY, United States of America-Prof. Kannan A.M.] Development of Unitized MEAs and Fuel cell system integration (1 KW) for Stationary and Transportation Applications	1	91.32
#399 [Vellore Institute of Technology-Dr. Anand Prabu Arun] [KYUNG HEE UNIVERSITY, South Korea-Prof. Hongdoo Kim] Design and Development of Eco-friendly Piezoelectric Energy Harvester based on Biodegradable Polylactic Acid	1	48.92

#431 [Indian Institute of Technology (Banaras Hindu University) Varanasi-Prof. Ram Sharan Singh] [HANYANG UNIVERSITY, South Korea-Prof. Ki Hyun Kim] Removal of Benzene, Toluene, Ethylbenzene and Xylene (BTEX) using Adsorption and Bioremediation	1	72
#485 [Alagappa University-Dr. Arun Alagarsamy] [TIANJIN UNIVERSITY, China-Dr. Kunyu Zhang] Cost Effective, Modified Microbial Bioplastics [Poly Hydroxyl Butyrate (PHB) And Poly Lactic Acid (PLA)] as an Alternative for the Petroleum Derived Plastics	1	56.58
#512 [National Institute of Technology Calicut-Dr. Nikhil Sasidharan] [VIRGINIA POLYTECHNIC INSTITUTE (VIRGINIA TECH), United States of America-Prof. Saifur Rahman] A Resilient DC Community Grid for the Provision of Ancillary Services to Local Grid	1	64.8
#575 [Indian Institute of Technology Gandhinagar-Dr. Atul Bhargav] [ECOLE NORMALE SUPÉRIEURE DE CACHAN, France-Prof. Rachid Bennacer] Materials for Sustainable and Energy Efficient Buildings	1	49.46
#581 [Institute of Chemical Technology-Prof. Ganapati D. Yadav] [RMIT UNIVERSITY, Australia-Prof. Suresh K Bhargava] Additive manufacturing in Heterogeneous Catalysis : CO2 hydrogenation for the production of fuels	1	96
#589 [Indian Institute of Science-Dr. Alope Kumar] [COLUMBIA UNIVERSITY, United States of America-Prof. Ponisseril Somasundaran] Green Bricks for Sustainable Living: do they have strength	1	49.9
#672 [Jamia Millia Islamia-Dr. SAIQA IKRAM] [THE UNIVERSITY OF QUEENSLAND (UQ), Australia-Prof. Darren Martin] Preparation of Nanocellulose & Nanocomposites as Multifunctional Materials derived from Biomass towards Sustainable Developments	1	89.9
#70 [Indian Institute of Technology (Banaras Hindu University) Varanasi-Prof. Rajiv Prakash] [TOKYO INSTITUTE OF TECHNOLOGY, Japan-Prof. Takaaki Manaka] Harnessing the synergy of low band gap organic semiconductors and highly facile floating film transfer method for low cost efficient organic electronic devices.	1	42.89

#744 [Indian Institute of Technology Bhubaneswar-Dr. Animesh Mandal] [BRUNEL UNIVERSITY, United Kingdom-Prof. Hari-Babu Nadendla] Aluminium-Cerium based alloys for high temperature applications	1	40.56
#757 [Jamia Millia Islamia-Dr. Haque Ahteshamul] [AALBORG UNIVERSITY, Denmark-Prof. Frede Blaabjerg] Resiliency and reliability of a renewable based power electronics based power system	1	95.08
#772 [National Institute of Technology Warangal-Dr. Naga Srinivasulu G] [UNIVERSITY OF DELAWARE, United States of America-Prof. Ajay K Prasad] Experimental Investigations on different Geometrical shapes of Passive Direct Methanol Fuel cell stacks for Low Power Applications	1	43.66
#773 [National Institute of Technology Warangal-Dr. Naga Srinivasulu G] [NATIONAL TAIWAN UNIVERSITY (NTU), Taiwan-Prof. Kuo-Long Pan] Simulation and experimental evaluation of dual fuel Homogeneous Charge Compression Ignition Engine by using reactivity fuels	1	43.66
#811 [National Institute of Technology Warangal-Dr. Karthik Balasubramanian] [NATIONAL UNIVERSITY OF SINGAPORE (NUS), Singapore-Dr. Poh Seng Lee] Thermal Management of Green Data Centers	1	44.4
#812 [Indian Institute of Technology Gandhinagar-Dr. CHINMAY GHOROI] [DUKE UNIVERSITY, United States of America-Dr. MICHAEL H BERGIN] Understanding the impact of air pollution on solar photovoltaics and developing surface engineered panel materials for improved performance of solar plants	1	51.16
#848 [Indian Institute of Technology Guwahati-Prof. Tamal Banerjee] [UNIVERSITY OF LISBON, Portugal-Prof. Isabel Maria Marrucho] Hydrophobic Deep Eutectic Solvent for Remediation of Antifungal and Antibiotics in Waste water	1	51.82
#850 [Birla Institute of Technology & Science-Dr. Srinivas Appari] [KYUSHU UNIVERSITY, Japan-Prof. Shinji Kudo] Prevention of Hazardous Field-Firing of Bagasse and Its Sustainable Utilization as a Raw Material in An Innovative Industrial Process	1	28.8

#86 [Indian Institute of Technology Kharagpur-Prof. Kinsuk Naskar] [TECHNISCHE UNIVERSITÄT DRESDEN, Germany-Dr. Sven Wiessner] Development of Advanced Elastomeric composites from Eco-friendly and Renewable Sources exploring Green Technology	1	72
#890 [Alagappa University-Dr. RAMALINGAM G] [BRUNEL UNIVERSITY, United Kingdom-Prof. Poopathy Kathirgamanathan] 2D-QDs (Two Dimensional QDs): Synthesis and Applications in Electroluminescent diodes, Sensors and Solar Cells.	1	59.94
#904 [Chaudhary Charan Singh Haryana Agricultural University-Dr. Yogender Kumar Yadav] [UNIVERSITY OF BRITISH COLUMBIA, Canada-Dr. Anthony Lau] Identification of techno-economically viable biomass conversion technologies for crop residue management	1	74.74
#921 [National Institute of Technology Tiruchirappalli-Dr. Vivek Mohan] [THE HONG KONG POLYTECHNIC UNIVERSITY, Hong Kong-Dr. Siqi Bu] Potential Peer to Peer Transactive Energy Market in Indian Power Distribution Systems	1	27
#927 [Indian Institute of Engineering Science and Technology, Shibpur-Prof. Hafizur Rahaman] [HIROSHIMA UNIVERSITY, Japan-Prof. Hans Juergen Mattausch] Development of high efficiency power electronic converter technology using next generation Si/SiC-based switching devices with integrated gate drivers for high frequency operation at reduced losses	1	100
#965 [National Institute of Technology Tiruchirappalli-Dr. Anand Ramanathan] [UNIVERSIDADE FEDERAL DO RIO DE JANEIRO, Brazil-Prof. Amaro Olimpio Pereira] Environmental and Energy Impacts of Higher Alcohol and Biofuel Synthesis by Thermochemical Process	1	67.8
Technologies for Rural and Women Empowerment	5	302.3
#1313 [Indian Institute of Technology Kharagpur-Dr. P. K. Singh] [UNIVERSITY OF WAIKATO, New Zealand-Prof. Frank Scrimgeour] Development of a Digital Platform for Financial Inclusion and Rural Women Empowerment	1	58.44
#278 [Indian Institute of Technology Indore-Prof. Vimal Bhatia] [UNIVERSITY OF OULU, Finland-Prof. Sudhir Sharan Dixit] 6G Connectivity for Sustainable Development Targeted at Rural and Remote Communities	1	70.8

#413 [University of Hyderabad-Prof. Vijaya Bhaskar Marisetty] [RMIT UNIVERSITY, Australia-Prof. Lisa Farrell] Are Women Better Empowered with Technological Innovations? Understanding The Role of Fintech in Women Financial Empowerment and Well being	1	43.6
#697 [Anna University-Dr. Sunitha Don Bosco] [ERASMUS UNIVERSITY ROTTERDAM, Netherlands-Dr. Maartje van Eerd] COMMUNICATION FOR DEVELOPMENT (C4D): INTERVENTIONS IN RESETTLEMENT TO IMPROVE LIVELIHOOD OUTCOMES FOR POOR WOMEN	1	60
#759 [Indian Institute of Management Udaipur-Prof. Prakash Satyavageeswaran] [THE UNIVERSITY OF GEORGIA, United States of America-Prof. Sundar G Bharadwaj] Two Sides of a Coin: Empowering Rural People and Women as Consumers and Entrepreneurs through Use of Technology	1	69.46
Technology Enhanced Education and Learning (including Assistive Technologies)	1	52.43
#1168 [Sri Ramachandra Institute of Higher Education and Research-Dr. Padma Srikanth] [TEXAS A&M UNIVERSITY, United States of America-Dr. Chittoor B Sai-Sudhakar] "Pen to Paper"-Evaluation of Scientific Reading, Writing and Working Skills	1	52.43
Convergence	23	1430.96
Affordable Health Care	5	325.93
#111 [SRM Institute of Science and Technology-Dr. Shanthini A] [UNIVERSITY OF CALIFORNIA, DAVIS (UCD), United States of America-Dr. Dr. Gunasekaran Manogaran] Prognosis of Microaneurysm and early diagnosis system for non - proliferative diabetic retinopathy using deep convolutional neural network.	1	60
#1254 [Indian Institute of Technology Kharagpur-Prof. K Kishore N] [PURDUE UNIVERSITY, United States of America-Prof. Rajeswari Sundararajan] Effective, Economical and Highly Selective Continuous Monitoring Type-2 Diabetes Patch using Thin-Film Organic Electronics with Neuromorphic Computing	1	106.2
#461 [Vellore Institute of Technology-Prof. Zachariah C Alex] [UNIVERSITY OF TEXAS DALLAS, United States of America-Dr. Shalini Prasad] Metal Oxide Semiconductors For Non-Invasive Diagnosis Of Breast Cancer	1	36

#468 [Indian Institute of Technology Bhubaneswar-Dr. M Sabarimalai Manikandan] [UNIVERSITY OF MINNESOTA, United States of America-Prof. Keshab K. Parhi] E3DCRM: Energy-Efficient Embedded Systems for Data-Driven Cardiac Rhythm Monitoring	1	74.53
#974 [Sathyabama Institute of Science and Technology-Dr. Krupakar Parthasarathy] [NANYANG TECHNOLOGICAL UNIVERSITY (NTU), Singapore-Prof. Gerhard Gruber] Identification of Biomarkers for the development of Rapid diagnostics of Pulmonary Tuberculosis by quantum dot bio-imaging	1	49.2
Energy and Water Sustainability	7	467.34
#1167 [Indian Institute of Technology Bhubaneswar-Dr. Subhransu Ranjan Samantaray] [VIRGINIA POLYTECHNIC INSTITUTE (VIRGINIA TECH), United States of America-Dr. Virgilio A. Centeno] Design and Development of Low cost Time Synchronized devices for WAMs in Smart-Grids	1	70.27
#330 [National Institute of Technology Surathkal-Dr. Ramesh H] [UNIVERSITY OF WOLLONGONG, Australia-Prof. Muttucumar Sivakumar] Coastal reservoirs as a sustainable strategy for Water Security	1	64.8
#530 [National Institute of Technology Calicut-Dr. Noel Jacob Kaleekkal] [UNIVERSITY OF MARYLAND, BALTIMORE COUNTY, United States of America-Prof. Upal Ghosh] Tuning the Performance of Thin-Film Composite Membranes on Electrospun Support for Engineered Osmosis in water remediation	1	49.89
#593 [Indian Institute of Technology Kharagpur-Dr. Manoj Kumar Tiwari] [THE UNIVERSITY OF MELBOURNE, Australia-Dr. Meenakshi Arora] Integrated Urban Water Management for Enhanced Water Security	1	62.45
#689 [Indian Institute of Technology Bombay-Prof. Balaji Ramakrishnan] [UNIVERSITY OF EDINBURGH, United Kingdom-Prof. Vengatesan Venugopal] Renewable energies from Ocean: Adoptable and Sustainable technologies for Indian conditions	1	111.6
#781 [Indian Institute of Technology Madras-Prof. Ravikumar N V] [UNIVERSITÄT KÖLN, Germany-Prof. Sanjay Mathur] Tailoring Tantalum Nitrides and Oxy-nitrides & Designing Electrocatalytic Devices for Green Energy	1	63.91

#976 [Indian Institute of Technology Mandi-Dr. Gaurav Bhutani] [IMPERIAL COLLEGE LONDON, United Kingdom-Dr. Pablo Brito-Parada] Computational modelling of polydisperse multiphase bioreactor systems for wastewater treatment	1	44.42
Transportation and Smart Infrastructure	11	637.69
#1075 [Birla Institute of Technology & Science-Dr. Prasanta Kumar Sahu] [CARDIFF UNIVERSITY, United Kingdom-Dr. Dimitris Potoglou] Congestion Pricing: Planning for optimal strategies and commuters behavioral implications under different pricing schemes	1	29.4
#1189 [Anna University-Dr. Gunasekaran Karuppanan] [GEORGIA INSTITUTE OF TECHNOLOGY (GEORGIA TECH), United States of America-Dr. Srinivas Peeta] Development of Traffic dispersion model with the aid of video records from Multiple UAVs for effective Signal Coordination along Urban arterials carrying Heterogeneous Traffic flow	1	46.5
#1330 [Indian Institute of Technology Kharagpur-Prof. Pallab Dasgupta] [TECHNISCHE UNIVERSITÄT MÜNCHEN, Germany-Prof. Samarjit Chakraborty] Transportation Cyber-Physical Systems	1	79.8
#1506 [Indian Institute of Technology Patna-Dr. Joydeep Chandra] [UNIVERSITY OF PORTO, Portugal-Dr. Joao Mendes Moreira] Improving regional transportation services using GPS data	1	60.24
#1528 [Indian Institute of Technology Kharagpur-Dr. Ankhi Banerjee] [Queen's University Belfast, United Kingdom-Dr. Deepti Adlakha] Transit Oriented Development (TOD): Developing an Integrated Housing and Transport Model	1	90.28
#171 [Indian Institute of Technology Bombay-Dr. Meera Raghunandan] [UCL (UNIVERSITY COLLEGE LONDON), United Kingdom-Dr. Fabio Freddi] Improved Community Performance from Seismically Resilient Strategic Infrastructure Facilities	1	72.19
#318 [Indian Institute of Technology Kanpur-Dr. Salil Goel] [THE UNIVERSITY OF MELBOURNE, Australia-Prof. Stephan Winter] Park-IT: Advanced Parking Information and Management for Indian Traffic	1	49.9

#359 [Indian Institute of Technology Hyderabad-Dr. Suriya Prakash Shanmugam] [UNIVERSITÄT STUTTGART, Germany-Prof. Akanshu Sharma] Smart Hybrid Fiber Reinforced Polymer Composite Strengthening System for Civil Infrastructure	1	72.48
#510 [Indian Institute of Technology Kharagpur-Dr. Arkopal Kishore Goswami] [UNIVERSITY OF LEEDS, United Kingdom-Dr. Charisma Choudhury] Developing an integrated land use - transport - emissions model utilising emerging big data sources for quantifying the energy and environmental impacts of ridesharing services	1	46.82
#920 [Indian Institute of Technology Delhi-Prof. Vasant Matsagar] [THE UNIVERSITY OF QUEENSLAND (UQ), Australia-Dr. David James Lange] Fire Safety in Underground Tunnels	1	49.94
#935 [Indian Institute of Technology Madras-Dr. Suresh Rajendran] [UNIVERSITY OF LISBON, Portugal-Prof. ANTONIO PASCOAL] Development of guidance and control systems for sea going autonomous surface vehicles (ASV)	1	40.14
Emergent Areas of Impact	73	4549.66
Advanced Functional and Meta Materials	19	1200.26
#1019 [Indian Institute of Technology Madras-Prof. Shankar Krishnapillai] [HANYANG UNIVERSITY, South Korea-Prof. Sung Kyu Ha] Multiscale studies of Compression-after-impact in fiber reinforced composites.	1	45.6
#1023 [Indian Institute of Science-Prof. Jaydeep Kumar Basu] [COLUMBIA UNIVERSITY, United States of America-Prof. Sanat Kumar] Cleaning air and water using novel polymer grafted nanoparticle based membranes	1	54
#1064 [Indian Institute of Science-Prof. Jaydeep Kumar Basu] [UNIVERSITY OF PENNSYLVANIA, United States of America-Prof. Ritesh Agarwal] Strong Light-matter Interaction in Low Dimensional Material Syetems - From Fundamental Science to Quantum Technologies	1	51.6
#1086 [Indian Institute of Technology Madras-Prof. B S MURTY] [OHIO STATE UNIVERSITY, United States of America-Prof. Hamish Fraser] Quantum mechanically guided design and multi-scale characterisation of novel, interface strengthened multi-principal element compositionally complex alloys	1	69.6

#116 [Indian Institute of Technology Indore-Dr. Biswarup Pathak] [UPPSALA UNIVERSITY, Sweden-Prof. Rajeev Ahuja] Atomistic Modelling of Pt-Nanocluster Based Electrocatalysts for Fuel Cell Applications	1	74.95
#1212 [Indian Institute of Technology Kanpur-Prof. Bishakh Bhattacharya] [SWANSEA UNIVERSITY, United Kingdom-Prof. Sondipon Adhikari] Vibration absorption using metamaterial based composites	1	100
#1393 [National Institute of Technology Warangal-Dr. Narasimha Rao R] [NATIONAL UNIVERSITY OF SINGAPORE (NUS), Singapore-Dr. Manoj Gupta] Insight Development on Tribological Response of Hybrid Aluminum Based Nanocomposites for Transportation sector	1	68.2
#236 [National Institute of Technology Tiruchirappalli-Prof. Anandan Sambandam] [THE UNIVERSITY OF MELBOURNE, Australia-Prof. Ashokkumar Muthupandian] Ultrasonically synthesised microspheres for biomedical and Food industries	1	72
#252 [Indian Institute of Technology Kharagpur-Dr. Ayan Roy Chaudhuri] [RWTH AACHEN UNIVERSITY, Germany-Dr. Dirk Wouters] Development of CMOS compatible resistive switching layer and highly non-linear selector for 3D-stackable 1S1R crossbar array-structured memory cell	1	45.12
#301 [Indian Institute of Technology Hyderabad-Prof. Subrahmanyam Ch] [HOKKAIDO UNIVERSITY, Japan-Prof. Vasudevan Pillai Biju] Hot and Multi Electron Mediated Photoelectrochemical Methods of High Efficiency Water Splitting	1	53.5
#483 [Indian Institute of Technology Gandhinagar-Dr. Jayaprakash Kalkunte Raghunath] [TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY, Israel-Prof. Oleg Gendelman] Analytical and Computational Study of Nonlinear Acoustic Metamaterials	1	71.04
#518 [Indian Institute of Technology Kharagpur-Prof. Kinsuk Naskar] [UNIVERSITY OF GRONINGEN, Netherlands-Prof. Francesco Picchioni] Development of thermally actuated shape memory elastomers for smart sensing and actuator applications with self-healing capability	1	60

#641 [National Institute of Technology Tiruchirappalli-Dr. Pandeewari R] [UNIVERSITY OF SASKATCHEWAN, Canada-Dr. Dinh Anh] Metamaterial- Based Low Profile LTCC Balanced Antipodal Vivaldi Antenna for 5G eMBB	1	48.65
#644 [Indian Institute of Technology Madras-Dr. Pallab Sinha Mahapatra] [UCL (UNIVERSITY COLLEGE LONDON), United Kingdom-Dr. Manish K Tiwari] Precision nanoengineered, wettability patterned surfaces with potential applications in energy and healthcare	1	66.6
#702 [Indian Institute of Technology Hyderabad-Dr. Suhash Ranjan Dey] [SHANGHAI JIAO TONG UNIVERSITY, China-Dr. Kolan Madhav Reddy] Tuning the Magnetic properties of nanocrystalline multi-component alloy thin film coatings through a single step electrodeposition for sensor applications	1	50
#754 [Indian Institute of Technology Delhi-Prof. Ratnamala Chatterjee] [LOUGHBOROUGH UNIVERSITY, United Kingdom-Dr. Niladri Banerjee] Doping-driven Tunable Multifunctionality in Half-Heusler Systems	1	48.82
#765 [Indian Institute of Technology Madras-Dr. Rajnish Kumar] [TEL AVIV UNIVERSITY, Israel-Prof. Hadas Mamane] Next generation multifunctional aerogels for treating soluble microplastics, pesticides and drugs in water, and recovery.	1	79.86
#785 [Indian Institute of Technology Madras-Prof. Sujatha Chandramohan] [CONCORDIA UNIVERSITY, Canada-Prof. Muthukumaran Packirisamy] Design of Magneto Rheological damper for Vehicular applications	1	62.72
#984 [Indian Institute of Science Education & Research Bhopal-Dr. Sankar Jeyaraman] [UNIVERSITY OF NEWCASTLE, Australia-Prof. Ajayan Vinu] Magnetic and Photophysical Studies on C ₃ N ₄ and its 2D Heterostructures	1	78
Advanced Sensors, Electronics and Communication	15	1080.45
#1051 [National Institute of Technology Tiruchirappalli-Prof. Umapathy Mangalanathan] [UNIVERSITY OF BRISTOL, United Kingdom-Dr. Guido Herrmann] Self-Powered Sensor System for Condition Monitoring of Nuclear Waste Packages	1	78.09

#1185 [Indian Institute of Engineering Science and Technology, Shibpur-Prof. Hafizur Rahaman] [DUKE UNIVERSITY, United States of America-Prof. . Krishnendu Chakrabarty] Design-for-Test Solutions for 3D Integrated circuits	1	89.43
#1249 [Indian Institute of Technology Bhubaneswar-Dr. Barathram Ramkumar] [VIRGINIA POLYTECHNIC INSTITUTE (VIRGINIA TECH), United States of America-Dr. Harpreet S Dhillon] Stochastic Geometry-based Design of UAV-Assisted IoT Network for Ubiquitous Surveillance Applications	1	74.42
#1392 [National Institute of Technology Warangal-Dr. Narasimharaju B L] [NORTH CAROLINA STATE UNIVERSITY, United States of America-Prof. SUBHASHISH BHATTACHARYA] Design and Development of New High Gain Transformer-less Inverter Topology for PV Based Grid Tie Applications	1	69
#1456 [Indian Institute of Technology Mandi-Dr. Ankush Bag] [NATIONAL CENTRAL UNIVERSITY, Taiwan-Prof. Jen-Inn Chyi] Technology Development of Compound Semiconductor Devices for Optoelectronic and Electronic Applications	1	56.88
#249 [National Institute of Technology Warangal-Dr. Venkata Mani Vakamulla] [UNIVERSITY OF EDINBURGH, United Kingdom-Dr. Wasio O Popoola] VLC-Based Vehicular Communication for enhancing Road Safety in Smart Cities	1	71.1
#266 [National Institute of Technology Silchar-Dr. Taimoor Khan] [QUEEN'S UNIVERSITY, Canada-Prof. Yahia M.M. Antar] Design and Development of Dielectric Resonator Based Electromagnetic Sensors for Efficient Harvesting of Renewable RF Ambient Energy in Smart City Applications	1	69.6
#271 [Indian Institute of Technology Guwahati-Dr. John Jose] [UNIVERSITÀ DEGLI STUDI DI NAPOLI FEDERICO II, Italy-Dr. Alessandro Cilardo] Approximate Computing Techniques for Resource Constrained Edge Devices	1	95.56
#291 [Indian Institute of Technology Roorkee-Prof. Karun Rawat] [UNIVERSITY OF CALGARY, Canada-Prof. Fadhel Ghannouchi] Radio Frequency Power Amplifier Design & Distortion Mitigation for Energy and Spectrum Efficient 5G Wireless Transmitters	1	81.6

#407 [Indian Institute of Technology Bombay-Prof. Maryam Shojaei Baghini] [TUFTS UNIVERSITY, United States of America-Prof. Sameer Sonkusale] Self Powered Flexible Bioelectronic Skin with Integrated Sensors, Electronics and Data Analytics	1	58.8
#453 [Indian Institute of Technology Delhi-Prof. Madhusudan Singh] [UNIVERSITY OF GLASGOW, United Kingdom-Prof. Ravinder Dahiya] Flexible and Disposable Heavy metal sensing patch for public health and regulatory applications	1	89.65
#50 [Banaras Hindu University-Prof. Ida Tiwari] [UNIVERSITY OF SURREY, United Kingdom-Prof. Ravi Silva] Designing of integrated sensor arrays for multianalyte detection for higher quality of life OR for better human health monitoring	1	56.44
#712 [Indian Institute of Technology Bhubaneswar-Dr. Manoranjan Satpathy] [UNIVERSITY OF CALIFORNIA, RIVERSIDE (UCR), United States of America-Prof. Laxmi Narayan Bhuyan] Rigorous Verification and Validation of Memory Systems in Heterogeneous Computing Systems using Statistical Model Checking	1	66
#837 [Indian Institute of Technology Madras-Dr. Deepa Venkitesh] [THE UNIVERSITY OF MELBOURNE, Australia-Prof. Ampalavanapillai Nirmalathas] Advanced photonic signal processing for future optical and wireless communication systems	1	72.3
#957 [Sri Ramachandra Institute of Higher Education and Research-Dr. Muthu MS] [THE UNIVERSITY OF WESTERN AUSTRALIA (UWA), Australia-Dr. Robert Anthonappa] Eye-tracking technology: applications and the power of eye movement in dental research	1	51.58
Artificial Intelligence and Cognitive Science	13	659.57
#104 [Symbiosis International-Dr. Rahee Amit Walambe] [THE UNIVERSITY OF QUEENSLAND (UQ), Australia-Prof. Xue Li] Development of Explainable AI Techniques for Complex Disease Diagnosis using Genomics Data	1	63.36
#1073 [Indian Institute of Technology Guwahati-Dr. Cota Navin Gupta] [KING'S COLLEGE LONDON (KCL), United Kingdom-Dr. Chiara Nosarti] Data driven neuro-behavioural clusters in adults who were born very preterm using multivariate analysis	1	51.52

#1293 [Indian Institute of Technology Madras-Prof. Krishnakumar R] [THE UNIVERSITY OF SYDNEY, Australia-Dr. Jinman Kim] Standardization in assessment of fetal ultrasound routine scans with computational modelling and machine learning	1	38.7
#1396 [Pandit Dwarka Prasad Mishra Indian Institute of Information Technology, Design and Manufacturing (IITDM), Jabalpur-Dr. Manish Kumar Bajpai] [UNIVERSITY OF CHICAGO, United States of America-Dr. Jonathan Ozik] Mathematical and Computational modelling of Epidemic Forecast and Disease Transformation	1	48.9
#1452 [Indian Institute of Technology Delhi-Prof. Sanjay Dhir] [BRUNEL UNIVERSITY, United Kingdom-Prof. Ashley Braganza] Impact of Artificial Intelligence on Productivity, Employability and Business Models in Health Care Sector	1	0
#1457 [Manipal Academy of Higher Education-Prof. Angela Brand] [FREIE UNIVERSITÄT BERLIN, Germany-Prof. Hans Lehrach] Digital Twins for personalised oncology: efficient parameterisation of large-scale mechanistic models	1	48.54
#436 [Indian Institute of Technology Roorkee-Prof. Sanjeev Kumar Manhas] [THE UNIVERSITY OF SHEFFIELD, United Kingdom-Prof. Merlyne De Souza] Non-filamentary three-Terminal Memristor Architecture for Bio-mimetic and Logic Design	1	46
#571 [Symbiosis International-Dr. Ketan Kotecha] [ARIZONA STATE UNIVERSITY, United States of America-Prof. Raghu Santanam] Development of Algorithms for Credibility Analysis of Information(CAI)	1	63.36
#58 [Indian Institute of Technology Roorkee-Prof. Sandeep Kumar] [WAGENINGEN UNIVERSITY, Netherlands-Prof. Cagatay Catal] Systematic Malware Detection and Analysis of Software-Intensive Systems (MaDeSiS)	1	44.4
#606 [Indian Institute of Science-Dr. chetan singh thakur] [WASHINGTON UNIVERSITY IN ST. LOUIS, United States of America-Prof. Shantanu Chakrabartty] Sensing-to-learn and Learning-to-sense: Exploiting Neuromorphic symbiosis of sensing, computing, memory and adaptation for designing the next-generation machine learning systems	1	49.8

#616 [Vellore Institute of Technology-Dr. Aswani Kumar Cherukuri] [DEAKIN UNIVERSITY, Australia-Dr. Gang Li] Intelligent anomaly detection system for encrypted network traffic	1	63
#620 [Indraprastha Institute of Information Technology Delhi-Dr. Tanmoy Chakraborty] [QUEEN'S UNIVERSITY OF BELFAST, United Kingdom-Dr. Deepak Padmanabhan] Collusion and Fake News: Are social networks being orchestrated in favor of fake news?	1	68.99
#731 [Indian Institute of Technology Roorkee-Prof. Partha Pratim Roy] [UNIVERSITY OF GRONINGEN, Netherlands-Prof. M.K. (Marieke) van Vugt] Tracking Depression and Elucidating its Mechanisms using Cognitive Neuroscience, EEG, and Machine Learning	1	73
Digital Humanities	12	710.41
#121 [Pondicherry University-Dr. Ujjwal Jana] [WESTERN SYDNEY UNIVERSITY, Australia-Prof. Rachel Hendery] Digital Humanities in the Indian Rim	1	0
#147 [Indian Institute of Technology Bombay-Prof. Preeti Rao] [UNIVERSITAT POMPEU FABRA, Spain-Prof. Xavier Serra] Computational Musicology and Study of Instruments in Indian Music Traditions	1	90
#222 [Indian Institute of Technology Roorkee-Prof. Arindam Biswas] [THE UNIVERSITY OF TOKYO, Japan-Prof. Tetsuo Kidokoro] Urban and Regional Inequality Modelling as Story-Telling: Using Simulation Models as Narrative	1	90.46
#305 [Indian Institute of Technology Bombay-Prof. Shishir K Jha] [THE UNIVERSITY OF QUEENSLAND (UQ), Australia-Prof. Adrian Lawrence Mabbott Athique] Platform Economies in Digital India: Assessing Implementation, Impact, Infrastructure and Aptitude	1	72.87
#368 [Indian Institute of Technology Indore-Dr. Nirmla Menon] [LANCASTER UNIVERSITY, United Kingdom-Prof. Deborah Sutton] A Digital Narratology of Technology as Literary Actors and Artefacts of Settings in Indian English Novels	1	49.2

#405 [National Institute of Technology Silchar-Dr. Avishek Ray] [GOLDSMITHS, UNIVERSITY OF LONDON, United Kingdom-Dr. Ethiraj Gabriel Dattatreya] Digital Expression of the Self(ie): Photographic Performativity in Contemporary India	1	59.9
#495 [Indian Institute of Management Ahmedabad-Prof. Samrat Gupta] [AUSTRALIAN NATIONAL UNIVERSITY (ANU), Australia-Prof. Israr Qureshi] The Dynamics of Polarization and Formation of Echo Chambers: Insights on Cultural Products in India and Australia	1	103.2
#497 [Jamia Millia Islamia-Prof. Nishat Zaidi] [MICHIGAN STATE UNIVERSITY, United States of America-Dr. Alexander Sean Pue] Digital Apprehensions of Poetics	1	73
#524 [Indian Institute of Management Ranchi-Dr. Tanusree Dutta] [UNIVERSITY OF ARIZONA, United States of America-Dr. Stuart R. Hameroff] Management of Fractal Time in High-level Decision Making	1	14
#750 [Jamia Millia Islamia-Prof. Biswajit Das] [KYUNG HEE UNIVERSITY, South Korea-Prof. Alex Taek-Gwang Lee] Critical Post-Media Studies in Asia: A Comparative Study of India, Japan and South Korea	1	49.44
#824 [Indian Institute of Technology Kharagpur-Prof. Niloy Ganguly] [PENNSYLVANIA STATE UNIVERSITY, United States of America-Prof. Prasenjit Mitra] Generating Actionable and Reliable Summaries from Social Media in a Post-disaster Scenario	1	49.54
#945 [Indian Institute of Technology Ropar-Dr. Dibyakusum Ray] [ROYAL HOLLOWAY UNIVERSITY OF LONDON, United Kingdom-Dr. Manishita Dass] "Offering Provocations, Surfacing Evidence": The Archiving of Cine-Politics under the Indian National Emergency through Digital Humanities 2.0	1	58.8
Infectious Diseases & Clinical Research	14	898.97
#1018 [Jamia Millia Islamia-Prof. Mohammad Zahid Ashraf] [NATIONAL UNIVERSITY OF SINGAPORE (NUS), Singapore-Dr. Manvendra Kumar Singh] Effect of hypoxia on tissue factor mediated coagulation pathway and their function in hypoxia induced thromboembolism	1	69.36

#1112 [Sri Ramachandra Institute of Higher Education and Research-Dr. Padma Srikanth] [JOHNS HOPKINS UNIVERSITY, United States of America-Dr. Ashwin Balagopal] A jolt from the gut - HIV-1 infection and the intestinal microbiome	1	52.42
#1188 [All India Institute of Medical Sciences New Delhi-Dr. Megha Brijwal] [UNIVERSITY OF ALABAMA AT BIRMINGHAM, United States of America-Dr. Suresh Boppana] INVESTIGATION OF VIRAL AETIOLOGIES IN NEONATES WITH MICROCEPHALY	1	70.08
#1487 [National Institute of Technology Raipur-Dr. ARINDAM BIT] [UNIVERSITY OF CALIFORNIA, LOS ANGELES (UCLA), United States of America-Prof. Ali Khademhosseini] Development of complete functional blood vessel network on multi-layered microfluidic platform	1	49.2
#27 [Shanmugha Arts Science Technology & Research Academy-Dr. Adline Princy Solomon] [UNIVERSITY OF HONG KONG (HKU), Hong Kong-Dr. Prasanna Neelakantan] Nano-titanium dental implant functionalized with novel biofilm inhibitors: Towards prevention of dental implant infections	1	81.3
#37 [Indian Institute of Technology Mandi-Dr. Rajanish Giri] [WASHINGTON UNIVERSITY IN ST. LOUIS, United States of America-Prof. Indira U. Mysorekar] Biophysics of Zika virus Envelope protein, membrane fusion and inhibitor discovery	1	99.2
#386 [Panjab University-Dr. Deepak B Salunke] [FLINDERS UNIVERSITY, Australia-Prof. Nikolai Petrovsky] Development of Synthetic TLR2, TLR7/8 and Mincle Agonists for Use as Part of a Combination Adjuvant in Tuberculosis Vaccines	1	44.4
#499 [Institute of Liver and Biliary Sciences-Dr. Sukriti Baweja] [KING'S COLLEGE LONDON (KCL), United Kingdom-Dr. Gautam Mehta] Determining the Role of Extracellular Vesicles as Communicosomes in Progression to Multi Organ Failure in Advanced Liver Disease	1	79
#62 [Indian Institute of Technology Kanpur-Prof. BV Ratesh Kumar] [UNIVERSITY OF PITTSBURGH, United States of America-Prof. Sudhir Kumar Pathak] Development and Neurosurgical Application of High Definition Fiber Tracking (HDFT)	1	99.61

#639 [Indian Institute of Technology Kharagpur-Prof. Sangeeta Das Bhattacharya] [THE UNIVERSITY OF MANCHESTER, United Kingdom-Prof. Vaskar Saha] Applying Artificial Intelligence to Improve Outcomes for Children Undergoing Maintenance Chemotherapy for Acute Lymphoblastic Leukemia in Low Resource Settings	1	78
#767 [Maharaja Sayajirao University of Baroda-Dr. Pushpendra Singh] [LEIDEN UNIVERSITY, Netherlands-Prof. Annemieke Geluk] Evaluation of Multi-Biomarker tests for leprosy and tuberculosis at the Point-of-Care level	1	50
#851 [Sri Ramachandra Institute of Higher Education and Research-Dr. Padma Srikanth] [UNIVERSITY OF COLORADO AT DENVER, United States of America-Prof. Randall J Cohrs] Varicella zoster virus (VZV) and the gut	1	52.43
#869 [All India Institute of Medical Sciences New Delhi-Dr. Shalimar] [UCL (UNIVERSITY COLLEGE LONDON), United Kingdom-Prof. Rajeshwar Prosad Mookerjee] A Multicentre Clinical Study Evaluating the Novel Biomarkers: Dimethylarginines and Ischemia-modified Albumin In Patients with Acute-on-Chronic Liver Failure	1	35.31
#958 [Maharaja Sayajirao University of Baroda-Dr. Devarshi Urvis Gajjar] [THE UNIVERSITY OF WARWICK, United Kingdom-Dr. Munehiro Asally] Microfluidic studies to understand / combat biofilm formation by Klebsiella spp.	1	38.66
Fundamental Research	32	2073.24
Applied and Interdisciplinary Sciences	5	335.87
#303 [Indian Institute of Science-Dr. Mohit Kumar Jolly] [QUEENSLAND UNIVERSITY OF TECHNOLOGY (QUT), Australia-Prof. Erik Walter Thompson] Dynamical systems biology of epithelial plasticity: an integrated computational-experimental approach	1	63.91
#420 [Indian Institute of Technology Bhubaneswar-Prof. Swarup Kumar Mahapatra] [NEW YORK UNIVERSITY (NYU), United States of America-Prof. SUNIL KUMAR] Computationally Guided Laser Based Tumor Diagnosis and Therapy	1	74.99

#444 [Indian Institute of Technology Kharagpur-Prof. Suman Chakraborty] [THE UNIVERSITY OF WARWICK, United Kingdom-Dr. James Sprittles] Confinement-induced dynamics in nanoscale phase transition	1	34.8
#657 [Jawaharlal Nehru University-Prof. Shandar Ahmad] [THE UNIVERSITY OF MANCHESTER, United Kingdom-Prof. Nicoletta Bobola] Role of binding site-flanking DNA conformation in genome-wide recognition by development-associated transcription factors	1	90
#910 [Indian Institute of Technology Madras-Prof. Pradeep Thalappil] [AALTO UNIVERSITY, Finland-Prof. Robin Ras] Understanding surface properties of atomically engineered cluster-assembled solids	1	72.17
Basic Sciences - Physical Sc., Chemical Sc., Biological Sc.	18	1129.89
#1138 [Indian Institute of Technology Ropar-Prof. Javed N Agrewala] [GEORGE WASHINGTON UNIVERSITY, United States of America-Prof. Imtiaz Ahmed Khan] Co-administration of rapamycin with MOG peptide and restricting the development of experimental autoimmune encephalomyelitis by skewing Th17 cells to Tregs	1	90
#1178 [Indian Institute of Science-Dr. Anindya Das] [PENNSYLVANIA STATE UNIVERSITY, United States of America-Prof. Jainendra K. Jain] IISC-Penn State collaboration on two-dimensional topological matter	1	51.55
#1236 [Indian Institute of Science-Prof. Ambarish Ghosh] [BROWN UNIVERSITY, United States of America-Prof. Humphrey Maris] Cavitation on electron bubbles in liquid helium: identifying low threshold events	1	48.6
#1404 [Indian Institute of Technology Hyderabad-Dr. Vandana Sharma] [UNIVERSITY OF OXFORD, United Kingdom-Prof. Gianluca Gregori] India- UK partnership in laboratory astro-particle physics	1	95
#1498 [All India Institute of Medical Sciences New Delhi-Prof. Vineet Ahuja] [UNIVERSITY OF OXFORD, United Kingdom-Prof. Simon Travis] Gut Microbiome - Regulators of the Intestinal Stem cell niche in Health and Inflammatory Bowel Disease	1	49.22

#153 [Indian Institute of Technology Guwahati-Dr. Chivukula Vasudeva Sastri] [RUPRECHT-KARLS-UNIVERSITÄT HEIDELBERG, Germany-Prof. Peter Comba] Perspective of Fluctuations in Electron Transfer Reactions in Non-Heme Chemistry	1	76.4
#1546 [Indian Institute of Technology Kharagpur-Prof. Sanjib K Patra] [UNIVERSITY OF BRISTOL, United Kingdom-Prof. Charl F J Faul] Perylene-based Supramolecular Polymers: from Controlled Structure to Controlled Function	1	67.2
#250 [Indian Institute of Technology Kanpur-Prof. Pankaj Jain] [UNIVERSITY OF KANSAS, United States of America-Prof. Dave Besson] Observation and Phenomenology of Ultra High Energy Cosmic Ray Neutrinos and at ANITA, ARA and ARIANNA and Other Detectors	1	31.44
#311 [Indian Institute of Science-Prof. Elangannan Arunan] [NEWCASTLE UNIVERSITY, United Kingdom-Dr. Nicholas R Walker] Intermolecular Interactions of Hydrogen Sulphide	1	50.4
#315 [Indian Institute of Science-Prof. Aninda Sinha] [UNIVERSITY OF OXFORD, United Kingdom-Prof. Luis Fernando Alday] New approaches for conformal quantum field theories	1	48
#331 [Indian Institute of Technology Kanpur-Dr. Vipul Arora] [MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT), United States of America-Prof. William Detmold] Machine Learning for Lattice Quantum Chromodynamics	1	60.94
#39 [Indian Institute of Technology Indore-Dr. Suman Majumdar] [STOCKHOLM UNIVERSITY, Sweden-Prof. Garreit Mellema] Imaging the first billion years of the universe with next-generation telescopes	1	60
#427 [Indian Institute of Technology Kanpur-Prof. Sandeep Verma] [LA TROBE UNIVERSITY, Australia-Prof. John Moses] Stabilizing Neurodegenerative Polyglutamine Repeat Fibrils by SuFEx Chemistry: A Combined Synthetic and Biophysical Investigation	1	60
#460 [Indian Institute of Science Education & Research Kolkata-Prof. Amit Ghosal] [FLORIDA STATE UNIVERSITY, United States of America-Prof. Kun Yang] Vortex lattice in strongly correlated unconventional superconductors	1	49.13

#578 [Indian Institute of Technology Hyderabad-Dr. Anurag Tripathi] [UNIVERSITY OF TURIN, Italy-Prof. Lorenzo Magnea] Perturbative QCD for Precision Physics at the LHC	1	95.58
#78 [Indian Institute of Science Education & Research Thiruvananthapuram-Dr. Nishant KT] [RUPRECHT-KARLS-UNIVERSITÄT HEIDELBERG, Germany-Dr. Michael Knop] Mutation rate estimates in yeast strains	1	49.55
#885 [Indian Institute of Technology Madras-Dr. Sivarama Krishnan] [AARHUS UNIVERSITY, Denmark-Prof. Marcel Mudrich] Unraveling radiation damage processes in biologically relevant mesoscopic systems	1	74.4
#942 [Indian Institute of Technology Madras-Prof. Balaji Srinivasan] [UNIVERSITY OF SOUTHAMPTON, United Kingdom-Prof. Johan Nilsson] Mitigation of Stimulated Brillouin Scattering (SBS) for power scaling of narrow linewidth fiber amplifiers	1	72.48
Earth, Atmosphere and Environmental Science	3	189.18
#1213 [Indian Institute of Technology Madras-Dr. Manikandan Mathur] [ÉCOLE NORMALE SUPÉRIEURE DE LYON, France-Prof. Thierry Dauxois] Resonant Triad Interactions in Stratified Shear Flows	1	41.4
#1256 [Indian Institute of Technology Kanpur-Dr. Balaji Devaraju] [CURTIN UNIVERSITY, Australia-Prof. Will Featherstone] Development of a precise gravimetric geoid for mainland India using terrestrial, airborne and satellite gravity data	1	62.4
#1324 [Indian Institute of Science-Prof. Sajeed Krishnan] [AUSTRALIAN NATIONAL UNIVERSITY (ANU), Australia-Prof. IAN STUART WILLIAMS] Development of modern dating techniques for understanding the origin and occurrence of strategic minerals	1	85.38
Humanities and Social Sciences	6	418.3
#1042 [Indian Institute of Management Udaipur-Dr. Dharendra Mani Shukla] [UNIVERSITY OF BRITISH COLUMBIA, Canada-Dr. Arjun Bhardwaj] Who Bridges Across Social Divides?	1	91
#1173 [Indian Institute of Technology Mandi-Dr. Ramna Thakur] [TECHNISCHE UNIVERSITÄT BERLIN, Germany-Prof. Martin Siegel] Area deprivation and the prevalence of non-communicable diseases: Analysis at the block level in Punjab	1	62.51

#1274 [Indian Institute of Technology Gandhinagar-Dr. Alok Kumar Kanungo] [FLINDERS UNIVERSITY, Australia-Prof. Claire Smith] Indigenous Cultural Heritage as a Facilitator for the Sustainable Development Goals	1	98.5
#818 [National Law University-Prof. J S Mann] [BEIJING NORMAL UNIVERSITY, China-Prof. Zhang guihong] Research proposal for conducting research for stimulating the best practices in teaching tools, research, reforms in curriculums, examinations, moot court activities, reading materials and future collaboration in legal education and research between China and India.	1	70.8
#862 [Jawaharlal Institute of Post Graduate Medical Education & Research-Prof. PAPA DASARI] [MONASH UNIVERSITY, Australia-Prof. Jane Fisher] Actions louder than words: Development and Evaluation of a Curriculum for Health Professionals and a Mobile Phone App for Intrapartum Women to actualize Respectful Maternal Care (RMC) in India.	1	51.75
#888 [Shanmugha Arts Science Technology & Research Academy-Dr. Selvabaskar S] [UNIVERSITY OF TSUKUBA, Japan-Dr. Caroline S.L Tan] Harnessing 'Digital India' - Scope for Technology Adoption by Unorganised Retailers	1	43.74
Innovation-Driven	21	1294.72
Design Innovation	1	46.7
#1451 [Indian Institute of Technology Roorkee-Prof. Sanjay A Chikermane] [DELFT UNIVERSITY OF TECHNOLOGY, Netherlands-Dr. Henk Jonkers] Reinterpretation of traditional technologies to create affordable resilient homes for rural communities	1	46.7
Nano, Biotechnology and Applications	10	622.17
#1145 [Indian Institute of Technology (Banaras Hindu University) Varanasi-Prof. Pradeep Srivastava] [FLORIDA STATE UNIVERSITY, United States of America-Prof. Chenzhong Li] Strategies towards generation of functional tissue engineered construct for orthopedic applications	1	27.6
#1394 [Birla Institute of Technology & Science-Dr. Arnab Hazra] [TEL AVIV UNIVERSITY, Israel-Prof. Yossi Rosenwaks] Carbon nanomaterials for chemical sensing applications	1	72

#1541 [Indian Institute of Technology Kharagpur-Prof. Ramkrishna Sen] [UNIVERSITY OF TORONTO, Canada-Prof. Mohini Sain] Development of green polymer based bio-nanocomposites of commercial interest through agro-industrial waste valorization (GREENEWVAL)	1	80.81
#32 [Indian Institute of Technology Mandi-Dr. Prem Felix Siril] [UNIVERSITÉ PARIS-SUD, France-Prof. Samy Remita] Developing conducting polymer nanostructures and their nanocomposites as visible light photocatalysts for environmental remediation using flow chemistry	1	61.03
#325 [Indian Institute of Technology Roorkee-Prof. Saugata Hazra] [UNIVERSITY OF CAMBRIDGE, United Kingdom-Prof. Nigel K.H. Slater] Combating Carbapenem Resistant Enterobacteriaceae (CRE): Using combinatorial approach of conventional therapeutics and theranostic nanomedicine	1	95.9
#377 [Indian Institute of Science-Prof. Bikramjit Basu] [COLUMBIA UNIVERSITY, United States of America-Prof. Kam W. Leong] Electrical stimulation with electroactive biomaterials as therapeutic strategy for intractable bone and neurodegenerative diseases	1	48.48
#612 [Indian Institute of Technology Kanpur-Prof. Ashok Kumar] [AALTO UNIVERSITY, Finland-Prof. Jukka Seppala] Development of 3D printable bone and nerve guiding drug eluting composite implants for vertebral/spine trauma in infection/tuberculosis and cancer	1	92.52
#748 [Birla Institute of Technology & Science-Prof. Sunil Bhand] [LUND UNIVERSITY, Sweden-Dr. Bin Xie] Novel micro and nano sensors for antibiotic resistance measurement	1	62.76
#969 [Indian Institute of Technology Guwahati-Prof. Parameswar Krishnan Iyer] [UNIVERSITY OF SCIENCE AND TECHNOLOGY OF CHINA, China-Prof. Shu Wang] Organic Nanomaterials Based Portable Device for Biosensing and Disease Diagnostic	1	26.4
#993 [Indian Institute of Technology Kharagpur-Prof. Mahitosh Mandal] [THE UNIVERSITY OF MANCHESTER, United Kingdom-Prof. Jonny Blaker] Engineered nano hydrogel for target specific delivery in squamous cell carcinoma.	1	54.67
Robotics and Embedded Systems	4	234.86

#1087 [National Institute of Technology Silchar-Dr. Rajeeb Dey] [DALHOUSIE UNIVERSITY, Canada-Prof. Jason Gu] Investigation and development of robust control strategy for nonlinear bilateral teleoperation system with delayed communication: An experimental validation for rehabilitation of stroke patients	1	68.06
#1191 [Indian Institute of Technology Gandhinagar-Dr. Vineet Vashista] [COLUMBIA UNIVERSITY, United States of America-Prof. Sunil K Agrawal] Assessing Gait and Balance during Walking using Body-worn Sensors	1	60.19
#481 [Indian Institute of Technology Gandhinagar-Dr. Vineet Vashista] [UNIVERSITY OF TEXAS AT AUSTIN, United States of America-Dr. James Sulzer] Study of Locomotor Adaptation Using a Single-degree-of-freedom Bilateral Gait Trainer	1	60.41
#713 [Indian Institute of Technology Roorkee-Prof. Pushparaj Mani Pathak] [QUEEN'S UNIVERSITY, Canada-Prof. Leila Notash] Design and Development of Cable-Driven Parallel Robot for Automated Construction	1	46.2
Technologies for Forensics, Security and Safety	4	279.62
#1016 [Indian Institute of Technology Bombay-Prof. Virendra Singh] [THE UNIVERSITY OF NEW SOUTH WALES (UNSW), Australia-Prof. Salil Kanhere] Blockchain-enabled Universal Healthcare System with Privacy-preserving Portable EHR	1	60.46
#448 [Indian Institute of Technology Indore-Dr. Neminath Hubballi] [NORWEGIAN UNIVERSITY OF SCIENCE AND TECHNOLOGY, Norway-Prof. Katrin Franke] Digital Forensic Knowledge Integration And Intelligence (DIREKT-Intel)	1	72.65
#747 [Indian Institute of Technology Kharagpur-Prof. Shamik Sural] [PURDUE UNIVERSITY, United States of America-Prof. Saurabh Bagchi] Where the Mind is without Fear - Developing Enablers for Safe Communication in Online Social Networks	1	49.39
#83 [Indian Institute of Technology Delhi-Prof. Prashanth Vangla] [GEORGIA INSTITUTE OF TECHNOLOGY (GEORGIA TECH), United States of America-Prof. J. David Frost] Advanced Technologies for Post-Disasters Reconnaissance, Forensic and Environmental Impact Studies-Geotechnical	1	97.12
Technologies for Swachh Bharat	2	111.37

#1382 [Indian Institute of Technology Kharagpur-Prof. MAKARAND M GHANGREKAR] [UNIVERSITY OF ANTWERP, Belgium-Prof. Ludo Diels] Recent developments in electrode synthesis for improving the performance and upscaling of bio-electrochemical systems for wastewater treatment and bioelectricity recovery	1	11.88
#678 [Indian Institute of Technology Madras-Prof. Indumathi Manivannan Nambi] [UNIVERSITY OF CALIFORNIA, DAVIS (UCD), United States of America-Prof. George Tchobanoglous] Circular Economy in Sanitation Projects - NPK Fertiliser, Carbon Recovery and Water Reuse	1	99.49
Grand Total	199	12599.62