

## DETAILS OF ONGOING R&D PROJECTS

1.	To Augment The Post-Graduate Teaching And Research Facilities In The Department Of Environmental Science & Engineering, Indian School Of Mines, Dhanbad	26 Apr 2016	14400000.00
2.	Lithosphere Structure And Rheological Characteristics Of The Eastern Indian Shield: Implications On Craton-Mobile Belt Interactions And Crustal Growth/ Recycle Processes	31 Mar 2016	3500000.00
3.	Synthesis And Catalytic Investigation Towards H2 Evolution By 1st Row Transition Metal Based Molecular Catalysts	28 Jul 2017	2899600.00
4.	Possible Hadean To Archaean Crustal Evolution In The Singhbhum Craton An Investigation Into The Detrital Zircon Archive	08 Aug 2017	4100200.00
5.	Development Of Environment Friendly Blasting Techniques	15 Sep 2017	2904000.00
6.	Reduced Graphene Oxide (Rgo)-Based Dendrimers As Novel Heterogeneous Catalysts For CO2 Fixation And Organic Synthesis	30 Jun 2018	600000.00
7.	Design And Development Of Low Cast Mesoporous Materials As Electrocatalyst For Production Of Hydrogen By Electrolysis Of Urea-Rich Waste Water	31 May 2018	325000.00
8.	Synthesis Characterization And Evaluation Of Novel Nanohybrid Polymers To Improve The Flow Behaviour Of Indian Waxy Crude Oils	01 Jun 2018	2546000.00
9.	Synthesis And Assembly Of Hybrid Nanostructured Materials For Explosives Narcotics And Harmful Chemical Detection	25 Jun 2018	2323125.00
10.	Development Of Field Deployable Fiber Bragg Grating Based Sensor For Monitoring Of Hazardous Toxic Chemicals	15 Jun 2018	3192500.00
11.	Ordered Classification Rules For Observations Into Several Correlated Normal, Elliptic, Von Mises-Fisher And Multivariate T-Populations	25 Oct 2018	1674292.00
12.	Symbol Pair Codes Over Finite Rings	15 Jun 2018	1532080.00
13.	Optical Sensors Based Traffic Weighbridge.	08 Jun 2018	4239049.00
14.	To Augment The Post Graduate Teaching And Research Facilities In The Department Of Applied Geophysics	14 Jun 2018	19800000.00
15.	TO Strengthen The Research Facilities In The Department Of Computer Science And Engineering	08 Jun 2018	5200000.00
16.	Linear Complexity 2-Adic Linear Complexity And Auto Correlation Values Of Generalized Cyclotomic Sequences	27 Jun 2018	660000.00
17.	Mathematical Investigations On Love Type Wave Propagation In Anisotropic Media	28 Jun 2018	660000.00
18.	Dynamic Modeling Of Spatial Epidemic And Eco-Epidemiological Systems – A New Healthcare Initiative	26 Jun 2018	660000.00
19.	Studies On Light Induced Heating In Upconversion Nanoparticles And Their Optimization For The Use As Photo-Acoustic Contrast Agent	07 Jun 2018	3410000.00
20.	Robust Super Capacitive Performance Of Polymeric Matrix, Nanoscale Organic, And Inorganic Filler Reinforced Nanohybrid Electrode Materials For Battery Replacement	09 Jun 2018	2991487.00
21.	Development Of A Sensitive Tool To Study The Nonlinear Properties Of Monoamine Neurotransmitters	14 Jun 2018	3696279.00
22.	Insights Into The Metallogenesis, Tectonic Elements, Fluid Evolution And Controls Of Copper Mineralization Around Mundiawas Areas, Alwar District, Rajasthan: Implications For Exploration	28 Jun 2018	1911200.00
23.	Assessment Of The Relationship Between Global Climatic Precursors And Hydrological Extremes Through Probabilistic Graphical Models	17 Jun 2018	2550170.00
24.	Analytical Modelling Of Surface Waves In Fiber-Reinforced And Micro-Polar Media	01 Jun 2018	1983520.00
25.	On Residuated Valued Automata, Categories And Associated Topologies	02 Jun 2018	1686520.00

	Divergent Syntheses Of Chondroitin Sulfate And Fucosylated Chondroitin Sulfate Oligosaccharides Via Orthogonally Protected Disaccharide Intermediates	10 Sep 2018	4109600.00
27.	Achieving Improved Operation Of Six Pulse Dc Bus Electrolytic Capacitor-Less Three Phase Inverter	30 Aug 2018	2329750.00
28.	Water Wave Interaction With Wave-Absorbing Breakwaters In The Presence Of Uneven Sea Bottoms	19 Jun 2018	1679480.00
29.	Development Of Eco-Friendly Magnesium Alloy Nanocomposites For Structural & Biomedical Applications	01 Nov 2018	4102000.00
30.	Development Of Estimation Procedures In Presence Of Various Types Of Non-Sampling Errors In Sample Surveys	14 Jun 2018	1825670.00
31.	The Kontorovich-Lebedev Transforms And Related Integral Operators On Function And Distribution Spaces	08 Jun 2018	1579094.00
32.	Electron And Positron Induced Chemistry At The Molecular Level: Investigation Through Scattering Studies	14 Jun 2018	2334970.00
33.	Development Of Surface Plasmon Resonance Ellipsometry As Label-Free Optical Biosensor For Ultra-Sensitive Detection Of Chemical And Biological	14 Jun 2018	3706000.00
34.	Design And Characterization Of SBVT For Elastic Optical Networks	06 Jun 2018	1896368.00
35.	Methane Drainage Prior To Mining	12 Jun 2018	30011600.00
36.	Design And Development Of Innovative Mosfet And Some Investigations On Its Novel Properties For Industrial Development	25 Jun 2018	2376000.00
37.	Roburt Super Capacitive Performance Of Polymeric Matrix, Nano Scale Organic And Inorganic Filler Reinforced Nanohybrid Electrode Materials For Batarry Replacement.	10 Jun 2018	2991487.00
38.	Development Of Low Dosage Hydrate Inhibitors For The Prevention Of Gas Hydrate Formation In The Oil And Gas Field Operations	03 Dec 2018	3963000.00
39.	Development Of Nano Material Reinforced Particle Gel Systems For Water And Gas Shut Off In Carbonate Reservoirs	03 Dec 2018	42867000.00
40.	"Electron Induced Chemistry Of Molecules Relevant To Space Applications"	27 Jun 2018	2456000.00
41.	Petrogenesis Of The Ultramafic-Mafic Rock Suites Of The Sargur Supracrustal Belt In The Western Dharwar Craton, Southern India: Significance To The Archean Crustal Evolution	23 Jun 2018	5960000.00
42.	Crustal Structure And Electrical LAB Beneath Rajmahal Trap And Dalma Volcanics From Magnetotelluric Investigations	10 Jun 2018	8946400.00
43.	Compressible Modules And Their Applications	29 Jun 2018	354500.00
44.	Vulnerability Analysis Of Engineered Slopes Along NH-05, From Jeori To Tranda, Himanchal Pradesh, India	02 Aug 2018	2894749.00
45.	Studies On Different Flocculants For Solid-Liquid Separation Processes Of Coal Preparation Plants Tailings	13 Aug 2018	1150000.00
46.	Investigation On Corrosion Inhibition Properties Of Nanostructures Passivated Zinc Surface Using Surface Plasmon Resonance And Electrochemical Impedance Spectr	02 Jan 2018	1250000.00
47.	Low-Cost Array-Based Earthquake Early Warning For Eastern India	09 Jun 2018	14999020.00
48.	Hydrological Study And Assessment Of Ground Water/Surface Water	2-May-18	674960
49.	Development And Filed Trial Of 500T Capacity SAGES-III For Use With Continuous Minor	23 Apr 2019	8569000.00
50.	Syntheses Of Both Enantiomers Of Carbohydrate Based Organocatalysts And Gelators From D- OR L- Arabinose And Their Applications In Asymmetric Organocatalysis.	17 May 2019	1400000.00
51.	Mahemathical Modeling Of Elastic Waves In Fractional Order Thermoelastic Solids With Micro-Configurations And Intially Stressed Media	05 Jul 2019	1576000.00
52.	Design And Development Of Deployable Thin Film Based Evanescnet Field Sensor To Check The Quality Of Food From Adulteration.	17 Jul 2019	1307325.00
53.	Geophysical Prospecting Along Northern Fringes Of Dalma Volcanics Around Kantaldih - Pharenga Area.	30 Jul 2019	2993600.00
54.	Study And Design Of Wideband Conformal Antenna Based On Dielectric Resonator With High Power Handling Capabilities	28 Jul 2019	972000.00
55.	Design And Efficient Implementation Of Low Cost And Power Proficient Model Of Cyber Security System Physical Layer Circuit	08 Jan 2019	3499967.00

	Through Accomplished Powerful Algorithm By Advanced Innovative Electronic Active Devices.		
56.	CO2 As A Building Block For Synthesis Of Fine Chemical And Fuel Over Functionalized Materials.	28 Jul 2019	6312032.00
57.	PAVITR- Potential And Validation Of Sustainable Natural & Advance Technologies For Water & Wastewater Treatment, Monitoring And Safe Water Reuse In India.	31 Mar 2019	5069000.00
58.	Investigation Into The Planning And Design Aspects Governing The Selective Coal Cutting Technology Using Surface Minor For Various Rock Conditions For Clean Coal Production	14 Jun 2019	33638680.00
59.	Upgradation Of Power Hydraulics Lab	28 Mar 2019	15200000.00
60.	Augmentation Of Research Facility In The Department Of Mechanical Engineering	14 Jul 2019	18700000.00
61.	Evaluating Basin-Scale Estimates Of Evapotranspiration Using Space-Based Observations	29 Apr 2019	2143200.00
62.	Developing A Framework Of Critical Indicators For Success Of Remanufacturing In India	16 Jul 2019	1656600.00
63.	Synthesis And Application Of Air-Stable Lewis Acid Catalysts Of Main Group Elements	15 Feb 2019	1962400.00
64.	Interoperability Issues In Fog-Cloud Infrastructure For Iot Applications	21 Feb 2019	2082000.00
65.	Geomechanical And Wellbore Stability Modeling In Coal Bed Methane Reservoirs In Parts Of Central And Eastern Indian Coalfields	22 Feb 2019	2700700.00
66.	Dyke Intruded Fractured Rock Characterization Using Discrete Dual Porosity And Neural Network Based Modelling Of Geo-Electrical Data For Water Resource Management	26 Feb 2019	2622000.00
67.	Rational Design Of Amphiphilic Self-Assembled Graft Copolymers As Drug Carriers: Experimental And Theoretical Approach	11 Jul 2019	2787400.00
68.	Development Of Near Infrared Long Persistent Phosphors For Defence And Security Applications	12 Mar 2019	4623300.00
69.	Multi-Hazard Performance Assessment Of Highway Bridges Under Seismic And Blast Loading	12 Mar 2019	2684500.00
70.	Design And Development Of Novel Adsorption Systems For Green Refrigeration And CO2 Capture	12 Mar 2019	4192280.00
71.	Well Growth Zno Nano Rods Used To Fabricate LSPR Based Optical Fiber Sensor To Detect Automobile Fuel Adulteration	11 Mar 2019	2073500.00
72.	Design, Development And Prototyping Of A Reduced Switch MLI Based Grid Connected Photovoltaic System With Energy Storage For Supplying Critical Loads And Fulfilling Peak Load Demand	18 Mar 2019	4097000.00
73.	Roman Domination In Graphs And Its Variations: Theory And Algorithms.	20 Mar 2019	660000.00
74.	Development Of Cheap And Durable Anti-Fingerprint And Anti-Reflective Coatings For Electronic And Optical Display Panels	19 Mar 2019	2567400.00
75.	Performance Evaluation Of Controller Placement For Software Defined Networks	12 Mar 2019	1820590.00
76.	Development Of Light Weight High Entropy Alloy (HEA) Nanocomposites	18 Mar 2019	4588000.00
77.	Development Of A Non-Invasive Insulation Diagnostic System For Large Power Equipment Employing Cellulose Impregnated With Alternate Dielectric Liquid As Its Primary Insulation Taking Into Consideration The Influence Of Trapped Charge Present In The System	09 May 2019	4009354.00
78.	Design And Development Of Fiber Ring Loop Down (FRLD) Based Monitoring System For Roof Safety Measure In Underground Mines	29 May 2019	3338764.00
79.	Machine Learning Based Agriculture Advent For Farmer Activity Development In India: An Application Approach	01 Jun 2019	2046500.00
80.	Model Updating & Aeroelastic Control Of Delaminated Aircraft Structures	29 Jun 2019	4680456.00
81.	Identification And In Vivo Validation Of C-Jun-N-Terminal Kinase 3 (JNK-3) Inhibitors As Novel Therapeutics For Neurodegenerative Diseases	20 Jun 2019	4232910.00
82.	Modeling Of Wear In Radial Hydraulic Turbine.	29 Nov 2019	3611759.00
83.	On-Chip Silicon Photonic Switches For High Performance Computing And Datacenter Networks	16 Nov 2019	2034500.00

	Development Of Signal Processing Framework For Uplink/Downlink Of Multi-Cell, Multi-User Massive MIMO-FBMC-OQAM Based 5G Communication System	13 Dec 2019	1302400.00
85.	Multi-Output Series Resonant Inverter For Non-Contact Heating In Rural Domestic Cooking Applications	19 Dec 2019	1518000.00
86.	Execution Of A Common Approach For Current Sensor Fault-Tolerant Control Of Induction Motor Drives In Different Control Regimes	25 May 2019	4686264.00
87.	Beneficiation And Extraction Of Platnum And Platnum Group Elements (PGE) From Mangalwedha Soil.	18 Oct 2019	1848000.00
88.	Solar Driven Community Portable Water Purification System	15 Nov 2019	7209400.00
89.	Thermochemical convection in the Earth's core with thermal core-mantle interaction.	15 Jul 2019	3500000.00
90.	Preparation of Master Plan-2030 for Dhanbad Municipal Corporation	01 Sep 2019	3215000.00
91.	Modification of polysaccharides for various commercial applications	30 Nov 2019	1080000.00
92.	Theatre and Dance Movement Therapy as Rehabilitative Tools for people with mental retardation: An Empirical Study	23 Sep 2019	630000.00
93.	Critical Assessment of road network, pavement and its elements as per the relevant IRC and IS codal provisions.	18 Nov 2019	1003000.00
94.	Geoenvironmental And Geotechnical Issues Of Coal Mine Over Burden	23 Mar 2019	4391561.00
95.	Nonlinear vibration and instability analysis of composite structural elements through advanced shear-deformation theories and homogenization based damage model	29 Jul 2019	4991220.00
96.	Investigation on Barter Piles in Laterally Spreading Soil.	04 Jul 2019	2478480.00
97.	To Design, Develop and Fabricate a Piezoelectric Sensor Based Ash Level Measurement System.	29 Jul 2019	2011900.00
98.	Characterization and Assessment of utilization potential of coal for Power Plants	21 Sep 2019	198240.00
99.	Regarding Blast Induced Ground Vibration ,Control Of Flying Fragment And Blasting In The Vicinity Of Inhabited Area Of Stone Quarries	21 Aug 2019	390308.00
100.	Monitoring of air quality and analysis of water samples and noise monitoring at different points of Washery & Chasnalla.	09 Jan 2019	1699200.00
101.	Development of Cement-free Concrete using GGBS and Fly Ash for Civil Infrastructures	16 Sep 2019	2360000.00
102.	Supramolecular gelator for oil demulsification	16 Jul 2019	1595000.00
103.	Development of energy efficient control scheme for induction motor drive used in EV and HEV	28 Feb 2020	8437000.00
104.	Structure and properties of nematic liquid crystal colloids in confined geometry: Theory, Computer Simulation and Experiment	11 Mar 2020	2336400.00
105.	Mixture reliability analysis of remanufactured products.	16 Jan 2020	660000.00
106.	Study of impicator based lattice valued automata	05 Feb 2020	660000.00
107.	Mettallogenetic Evolution of Gold (+PGE) mineralization with implications for crust-mantle processes, invisible gold and role of organic matter linked to mineralization events in parts of Archean Singhbhum orogenic belts	12 Feb 2020	5180240.00
108.	Structural Geometry, Kinematics of deformation, Grain Scale deformation mechanisms and Geothermobarometry of the east-central part of the Mahakoshal belt, Central India: Implication on the tectonic evolution of the Central Indian Tectonic Zone	05 Feb 2020	6985240.00

	Influence of micro-domain phase variation on kinematic and metamorphic reactions in assessing petrological evolution of rocks	17 Aug 2020	2706000.00
110.	An Investigation of Ergo-human Model to Evaluate the Functional Capacity of Coal Mine Workers	26 Feb 2020	3850739.00
111.	Mathematical Modeling of Concrete Structures under Combined Blast and Impact Loading.	21 Feb 2020	660000.00
112.	“Development of Energy Efficient Control Scheme for Induction Motor Drive Used in EV and HEV”,	28 Feb 2020	8437000.00
113.	CO <sub>2</sub> and biomass as feedstock for the production of fuels and chemical intermediates (CO <sub>2</sub> BioFeed)	25 Mar 2020	8410000.00
114.	Technologies for Mining under National Mission on Interdisciplinary Cyber Physical Systems (NM-ICPS)	30 Mar 2020	70000000.00
115.	Characterization of Groundwater in seismically active regions of Uttarakhand, India: Implications for earthquake induced variations	30 Apr 2020	9641146.00
116.	Design & Analysis of compact triple band circularly polarized Dielectric Resonator antenna for GPS & RNSS application	20 May 2020	1000000.00
117.	Development of new process chemistry towards synthesis of re-purposed drugs for potential treatment of Covid-19	21 May 2020	2464000.00
118.	Design, development and supply of special purpose equipment for cutting of composite hardware	28 May 2020	3961595.00
119.	Design and development of Mechanical Ventilator	08 July 2020	1039900.00
120.	Auto Irrigation and Soil Monitoring System for COVID-19 Migrants Engagement	15 July 2020	280000.00
121.	Land use Land cover study for Jharia group of collieries and washeries, Tata Steel	08 Jan 2020	2360000.00
122.	Distributed Cognitive System for Healthcare	28 July 2020	13255000.00
123.	Thermal Quality Evaluation of Barora Coal Washery Reject	10 Aug 2020	891798.00
124.	Quality assessment of Moonidih coal washery reject slurry	26 Aug 2020	106200.00