

List of new projects received during the year 2018-19 (II)

S.No.	Project Title	Institution	Principal Investigator & Qualification.	Objectives of the project	Project Cost & Duration	Remarks of the Committee
1.	A process design for making Ferro-coke from low grade non coking coal and iron ore fines as a charge material for Blast furnace	National Institute of Technology Rourkela Rourkela 769008, Odisha, India.	Dr. Smarjit Sarkar Head of the Department, Department of Metallurgical and Materials Engineering, National Institute of Technology, Rourkela, Odisha, Pin-769008 smarajit@nitrrkl.ac.in Phone No. +916612462551	Reduction of CO ₂ emission and stable supply of raw materials are two major issues of iron and steel industry. Low reductant consumption in blast furnace is required to reduce CO ₂ gas emission. In the present work Ferro-coke will be made from low grade coal and iron ore fines which will be used as a charge material for blast furnace. This will not only substitute high valued coke but also preserve costly iron ore. Also in this process as the carbon will be highly reactive, process of reduction will be faster thereby reduce the overall process time. Apart from fine ores, mill scale generated during steel making process may also be used for production of Ferro-coke.	Rs.44.088 lakhs 3 years	Pertains to Ministry of Coal. Rejected
2.	Assessment of seismic hazard in the Deeper Levels of hard rock mines by monitoring Induced-Seismicity during development and production	National Institute of Rock Mechanics Bengaluru	Dr. Balasubramanian VR, Scientist-V, vrb.subramanyam@gov.in ; Mo.No. 9448713920	i Identification of seismic activity due to rock mass movement, cracking or fracturing within rock mass ii. Locating the probable source points of the activity iii. Mapping of stress concentration zones iv. Estimation of the probable seismic hazard in and around the active mining area.	Rs. 388.74 lakh 3 years	Lack novelty, routine exercise and it is only a data acquisition. Rejected
3.	Assessment of Udaipur rock phosphate, low grade potassium feldspar and lignite mine waste for the development of organo-mineral fertilizer	ICAR-Central Arid Zone Research Institute Near ITI Circle Jodhpur, Rajasthan – 342 003	Dr. Praveen Kumar Head and Principal Scientist (Soil Chemistry and Soil Fertility) Division of Integrated Farming System ICAR-Central Arid	1. To assess potential of Udaipur rock phosphate and low grade feldspar with respect to P and K release in a biological and physico-chemical environment 2. To test the feasibility of Udaipur rock phosphate, K-feldspar and lignite mine waste for development of different formulations of organo-mineral fertilizer 3. To study the effect of organo-mineral formulations on agronomic and nutrient use	Rs.67.7592 lakhs 3 years	Recommended for PERC

S.No.	Project Title	Institution	Principal Investigator & Qualification.	Objectives of the project	Project Cost & Duration	Remarks of the Committee
	formulations		Zone Research Institute Jodhpur – 342 003 Contact Details: Email: Praveen.Kumar@icar.gov.in Mobile No.: +91-9460249988	efficiency in major crops.		
4.	Bench scale study on extraction of pure Silica and smelter grade Aluminium Fluoride from Coal Fly Ash (CFA)”	JNARDDC, Nagpur	Manoj T. Nimje Senior Principal Scientist (HoD Aluminium Electrolysis), JNARDDC, Nagpur	Based on in-house laboratory scale (10 g CFA) studies, it is confirmed that extraction of pure silica and aluminium fluoride from coal fly ash is technically possible. During the laboratory study parameters such as pressure within the process, precipitation of aluminium fluoride and recycling of mineral acid did not studied. It is therefore, the major objective of the project is to study process on bench scale (0.5-1 kg CFA) to understand:- Various parameters of process, such as Pressure Temperature Separation of pure silica Precipitation of aluminium fluoride and Recycling of mineral acid Material of construction for equipments. Probable Environmental pollution due to process. Cost economy of the process	Rs.63.026 lakh 18 months	Recommended for PERC
5.	Carbonation and valorisation of Zinc Waste (Jarosite) for resourcerecovery and carbon dioxide utilisation for novel construction materials.	CSIR-Central Institute of Mining and Fuel Research Barwa Road Dhanbad – 826015. Jharkhand	Dr Raj Shekhar Singh Senior Principal Scientist CSIR-Central Institute of Mining and Fuel Research Barwa Road Dhanbad – 826015. Jharkhand. India Contact Details : (Email & Mobile No.)	<ul style="list-style-type: none"> To sample and characterise variability in disposed jarofix/jarosite at HZL Evaluate coal-combustion, cement and other local wastes for use in the carbonated product (if required) Manufacture and test carbonated jarofix/jarosite for fitness for purpose as abuilding material Assess the embodied carbon in the 	Rs. 98.2389 lakh 3 years	Similar work has been done by NML jashedpur on Zinc waste. Rejected

S.No.	Project Title	Institution	Principal Investigator & Qualification.	Objectives of the project	Project Cost & Duration	Remarks of the Committee
			rajcimfr@gmail.com +91 835113131	carbonated products <ul style="list-style-type: none"> Carbon foot print analysis and its reduction Assess the potential commercial benefits for HZL from jarofix/jarositevalorisation through carbonation 		
6.	Catalytic precipitation of aluminium hydroxide from Bayer liquor using metal organic frameworks	Jawaharlal Nehru Aluminium Research Development & Design Centre, Nagpur	Mr. R.J. Sharma, Senior Principal Scientist, Alumina Division Jawaharlal Nehru Aluminium Research Development and Design Centre, Wadi, Amravati Road, Nagpur email: rjsharma@jnarddc.gov.in , sharmarj@hotmail.com , Phone: 9158931391	New process development in precipitation <ul style="list-style-type: none"> Explore the possibility of using metal organic framework to enhance the yield. To reduce the energy consumption by establishing parameters to produce alumina hydrate Study the kinetics/ mechanism of precipitation with respect to seed surface property by using metal organic framework (MOF) Comparison of precipitation kinetics with conventional seed with and without MOF. To study effect of ultrasound in catalytic precipitation using MOF To study ultrasonic precipitation kinetics for understanding catalytic precipitation mechanism using metal organic framework 	Rs. 58.31 Lakhs 2 years	Resubmit with consent letter from Alumina refinery and industrial support Recommended for PERC
7.	Characterization and Beneficiation of Lithium Bearing Minerals from Indian Deposits	CSIR-Institute of Minerals & Materials Technology	Dr. Shivakumar I Angadi, Scientist 08763866142 Shivakumar_ism@yahoo.com	The main objective of the present proposal is to characterize and beneficiate lithium bearing minerals from a minable Indian deposit as per Geological Survey of India reports.	Rs. 30.03 lakhs 3 years	Resubmit with details of the deposits. Recommended for PERC
8.	Continuous feeding friction stir processing tool for the development of	Indian Institute of Technology Patna &	Dr. Murshid Imam (PI) Assistant Professor, Department of	<ul style="list-style-type: none"> Fabrication of functionally graded alloys with nano-powder/particle reinforcement. Development of a friction stir processing tool for the in-situ powder/particle supply and 	Rs. 56.462 lakhs 3 years	Recommended for PERC

S.N o.	Project Title	Institution	Principal Investigator & Qualification.	Objectives of the project	Project Cost & Duration	Remarks of the Committee
	new functionally graded alloy	Indian Institute of Technology Hyderabad	<p>Mechanical Engineering Email: murshid@iitp.ac.in Contact No. :0612-302-8699 (O), +919523726846</p> <p>Dr. ViswanathChinthapenta (Co-PI) Assistant Professor, Department of Mechanical Engineering Email: viswanath@iith.ac.in Contact No. : +040-2301-7098 (O), +91 8790128695</p>	<p>hence improves productivity and applicability.</p> <ul style="list-style-type: none"> Mechanical and microstructural characterization of the developed functionally graded alloys system. Optimization and comparison of mechanical properties of newlyfabricated functionally gradedalloy with the automotive and marine aluminium alloys. Testing of material behavior at high temperature and deformation rates. Structural analysis of the newly developed functionally graded alloys using commercially available finite element software's. 		
9.	Creation of geotechnical database of Lateritic Bauxite deposits of Chhattisgarh State using Geoinformatics technology	Jawaharlal Nehru Aluminium Research Development & Design Centre (JNARDDC) & Geological Survey of India (GSI), Central Region, Seminary Hills, Nagpur	Dr Pravin G. Bhukte, Principal Scientist, JNARDDC. pgbhukte@jnarddc.gov.in / pg_bhukte@yahoo.com (Cell No-9960020724)	<p>Creation of geotechnical database data pertaining to the laterite and bauxitedeposits of Chhattisgarh State on district wise basis, in association with thegeo-referenced cadastral maps and high resolution satellite imageries.</p> <p><input type="checkbox"/> Use of modern geo-informatics technology in the era of lateritic bauxite deposits/mines for environmental management, sustainable development</p>	Rs. 94.96 Lakhs 2 years	<p>Review the outcome of similar project done for Maharashtra bauxite deposits before taking a view on this proposal.</p> <p>Rejected</p>
10.	Development of Process Flowsheet for Recovery of Rare	CSIR-Institute of Minerals & Materials Technology	Dr. M. S. Jena, Scientist, Mineral Processing, CSIR-Institute of	1. Pre-concentration of rare earth elements bearing minerals (present in coal rejects) by concentrating clean coal as by product from raw coal (rejects).	Rs.78.96 lakh 3 yrs.	<p>Repetition. Similar work is being pursued by IMMT with NALCO.</p> <p>Rejected</p>

S.No.	Project Title	Institution	Principal Investigator & Qualification.	Objectives of the project	Project Cost & Duration	Remarks of the Committee
	EarthElements bearing Minerals from High Ash Coals (rejects) of Odisha, India.	Bhubaneswar-751013 E-mail: msjena@immts.in	Minerals & Materials Technology, IMMT, Bhubaneswar-751013 E-mail: msjena@immts.in	2. Innovative technology on concentration of rare earth elements bearing minerals from coal rejects by suitable beneficiation techniques.		
11.	Development of Aluminum-Titanium Master Alloys and In-situ composites using Intermediates of Titanium Mineral Processing Plants	CSIR- National Institute for Interdisciplinary Science and Technology Trivandrum	Dr.T.P.D.Rajan Principal Scientist, Minerals and Metallic Materials Section, Materials Science and Technology Division CSIR- National Institute for Interdisciplinary Science and Technology Industrial Estate P.O., Trivandrum-695019, Kerala Email: tpdrajan@gmail.com , tpdrajan@niist.res.in Ph: 0471-2515327 / 9447035439 (M), Fax: 0471-2491712	The goal of the project is developing the Aluminum titanium master alloy and in situ composites containing Ti and also other minor additions of Zr and RE additions using Titanium mineral processing industrial intermediates by cost effective methodologies and in situ reactions. Most of the Al master alloys are very critical materials added to commercial alloys to enhance the properties through grain refinement and strengthening precipitate formations. The project will be carried out using the mineral processing industrial intermediates from Travancore Titanium Products.	Rs. 37.91496 Lakhs 2 years	Resubmit along with consent letter from beneficiary industry Recommended for PERC

S.No.	Project Title	Institution	Principal Investigator & Qualification.	Objectives of the project	Project Cost & Duration	Remarks of the Committee
12.	Development of capacitive deionization technology for uranium and lithium extraction	Indian Institute of Technology Madras	Professor T. Pradeep Institute Professor IIT Madras, Chennai Telephone: 044-22574208 Email: pradeep@iitm.ac.in	<p>1. Designing and fabrication of the set-up and electrode assembly for the CDI cell capable of handling uranium and lithium.</p> <p>2. Treating uranium and lithium contaminated water samples collected from mines and ground water around mines to bring the uranium and lithium level below tolerance limits.</p> <p>3. Setting up pilot plant for the demonstration of CDI technology to remove and concentrate uranium and lithium.</p>	Rs. 155.93 lakh 3 years	Resubmit with part funding from UCIL for reconsideration Recommended for PERC
13.	Development of new high temperature titanium alloys with improved properties by alloying additions	Indian Institute of Technology, Indore	Jayaprakash Murugesan Assistant Professor Discipline of Metallurgy Engineering and Materials Science, IIT Indore, Simrol, Indore – 453552. jayaprakash@iiti.ac.in 07324-306683 (o), 9755611891 (m)	<p>In the present study as an attempt to develop a new high temperature Ti alloys with improved properties by alloying (nitride and aluminium) addition has been investigated.</p> <p>1. The effect of N addition on microstructure and mechanical properties of near-α Ti-Al-3Zr-1.2Sn-0.08Si-xN (wt.%) alloys has been extensively investigated at both room temperature and 650°C. The nitride content was optimized for maximum improvement in mechanical properties at high temperature without distortion in microstructure features.</p> <p>2. Effect of increasing aluminium addition on microstructure and mechanical properties of near-α Ti-Al-3Zr-1.2Sn-0.08Si-xN (wt.%) alloys with optimized nitride content has been extensively investigated at both room temperature and 650°C. Optimize the alloying addition for maximum improvement in mechanical properties at high temperature without distortion in microstructure features.</p> <p>3. Fatigue and creep behavior of the newly identified alloys has been investigated in order ensure the safety of these alloy while implementing in safety critical applications.</p>	Rs. 27.82500 lakhs 3 years	Academic exercise with not much practical utility. Rejected

S.No.	Project Title	Institution	Principal Investigator & Qualification.	Objectives of the project	Project Cost & Duration	Remarks of the Committee
14.	Development of Novel Nanoporous hollow Fibre membrane based unit for the effective treatment of Mine waste water	National Institute of Technology Karnataka, Surathkal	Prof.Arun M. Isloor Membrane Technology Laboratory, Prof &Head of Department, Department of Chemistry National Institute of Technology Karnataka, Surathkal, Mangalore E-mail : isloor@yahoo.com mPh : 9448523990	1. In-house fabrication of polysulfone based hollow fibernanofiltration membranes& their characterization 2. Fabrication of cartridges of above prepared nanofiltration membranes 3. Filtration of the waste and contaminated water collected from mines i.e. M/s Hutti Gold Mine Co. Ltd., Iron ores of M/s NMDC at Donimali and Bailadilla, Uranium Corporation India Limited and few other mines (like Iron ore mines in Bellari area, Underground and open cast Copper mines) using above cartridges 4. Developing a mobile pilot plant prototype offiltration unit for treating mine waster and its commercilization of the pilot plant	Rs. 29.96075 lakh 3 years	Recommended for PERC
15.	Development of Perovskite based manganite materials using inexpensive precursor derived from beach sands of kerala for room temperature magnetic refrigeration applications.	CSIR-National Institute for Interdisciplinary Science & Technology, Thiruvananthapuram	Dr. M. Vasundhara professor Ph. No: 0261-2201812, 97129-00868 Email:sdv@amd.svnit.ac.in, shrutishukla171180@gma	No objectives, No budget (Project incomplete)		Incomplete proposal. Rejected
16.	Development of waste oil filtration and blending machine for mining applications	Indian Institute of Technology Patna	Dr.KaraliPatra Associate Professor Department ofMechanical Engineering Indian Institute ofTechnology Patna Bihta, Bihar801106	1. Design of turbulent mixer, selection of filters and optimizing sizes of different components and operating parameters of the filtration cum blending machine. 2.Detailed simulation to finalize flow meter/ mass flow meter, orifices and flowcontrol valves, overflow/low label indicators and different types of safety trips (Low/high pressure, low/ high temperature, safety valves, blasting trips, flow & mixing ratio indicators). 3. Development of feedback control system to	Rs. 76.64550 lakh 3 years	Lacks novelty. Rejected

S.No.	Project Title	Institution	Principal Investigator & Qualification.	Objectives of the project	Project Cost & Duration	Remarks of the Committee
			Email Id - kpatra@iitp.ac.in Contact no.: 0612-3038012 (O), 9473379638 (Mobile)	control pump and motor using signals from various sensors connected to the machine. 4. Fabrication of portable and automated waste oil filtration cum blending machine for application to ANFO blasting agent for mining industry. 5. Experimental validation and commercialization of the developed system		
17.	Direct production of Fe-Cr-Ni-Mn stainless alloy from mine waste by thermal plasma process	CSIR-Institute of Minerals & Materials Technology Bhubaneswar	Dr. A.K. Chaubey Principal Scientist Tel: (0674) 2379204 (O), 09438090232(M) E-mail: akchaubey@immt.res.in , anil.immt@gmail.com	The aim and objective of present proposed work is to produce Fe-Cr-Ni-Mn crude stainless steel alloy directly from the low graded chromite, nickel laterite and manganese ores by plasma smelting.	Rs. 65.991 lakh 3 years	Resubmit for reconsideration with part funding from CSIR. Recommended for PERC
18.	Environmental and Social Risk Assessment Tool for Exploration and Mining Projects	World Wide Fund for Nature (WWF) India , 172-B, WWF India, Max Mueller Marg, Lodhi Estate, New Delhi - 110003	SanketBhale Associate Director – Sustainable Business World Wide Fund for Nature (WWF) India sanketb@gmail.com , +919811581380	To develop a knowledge product for avoiding / minimising environmental and social risks to and from mining projects	Rs.59.625 lakhs 2 years	Recommended for PERC
19.	Experimental Investigations on Gas MetalArc Welding of SS409M Ferritic Grade StainlessSteel	Hindusthan Institute of Technology, Coimbatore-641032.	Dr.T.S.PRAVEE N M.E.,Ph.D., Associate Professor/Department of Mechanical Engineering, Hindusthan Institute of Technology,	To obtain a high strengthened weld and analyzing the weak zone in the weldment. By varying the input variables to obtain the stronger weldment.	Rs.27.4295 lakh	Pertains to ministry of steel Rejected

S.No.	Project Title	Institution	Principal Investigator & Qualification.	Objectives of the project	Project Cost & Duration	Remarks of the Committee
			Coimbatore-641032. Tamilnadu tspraveenram@gmail.com Mobile:9360192324			
20.	Exploration for Rare Earth Elements (REE) and Gallium (Ga) in selected bauxite-laterite soil profiles of India	CSIR-National Geophysical Research Institute, Hyderabad 500007	Dr. BULUSU SREENIVAS Principal Scientist, LAM-MC-ICP-MS Laboratory Institution with Address CSIR-National Geophysical Research Tel:040-23434700 (2461 Extn.) E-mail : bsreenivas@ngri.res.in	To assess the mobility and enrichment of REE in selected bauxite laterite soil profiles of India. ii. Critical appraisal of geochemical controls of HREE enrichment in potential profiles.	Rs.2.475 crores 3 years	Resubmit for reconsideration with partial funding (>= 50%) from CSIR. Recommended for PERC
21.	Extraction of Iron ore and Rare Earth Elements from the red-mud (Bauxite tailings) of Damanjodi, Koraput Dist., State of Odisha (Incomplete project, not in	Damanjodi, Koraput Dist., State of Odisha	Prof. Kandarpa Viswanath (KV) Professor, School of Ecology and Environment Studies, Nalanda University, Rajgir, Bihar Email: viswanath.au@gmail.com;	The Red-mud waste coming from NALCO Bauxite processing plant at Damanjodi is pumped into an open storage tank, which occupies approximately 2 sq km. The toxic waste is fine grained slurry and with high pH is potential pollutant to water, land and air to close proximity. All over the world research is going on for the utilization of this toxic waste, which is estimated to be accumulated into thousands of millions of tons. In India itself, this red mud waste is said to be more than 300 million tons. NALCO at Damanjodi is facing the problem of more	Rs. 3 crores 2 years	No red mud projects till status report is submitted by JNARDDC Rejected

S.No.	Project Title	Institution	Principal Investigator & Qualification.	Objectives of the project	Project Cost & Duration	Remarks of the Committee
	the proper format)		k.viswanath@nalandauin.edu.in ; Ph: +91-9440181069	<p>than 75 million tons of this red mud toxic material.</p> <p>The proposed research is aiming to extract iron in the form of hematite/iron hydroxide from the red mud. The previous studies by Principal Investigator (KV) indicate the possibility of separating the iron ore to the extent of more than 50% by weight from the red mud by simple size analysis. Also, it is observed that some of the lighter fractions are giving a hope of extraction of RE elements.</p>		
22.	Fabricating smartphone-based low cost assays for on-site monitoring of heavy and rare-earth metal ions in various environmental samples	Sardar Vallabhbhai National Institute of Technology (SVNIT) (Institution Under Central Government) Ichchhanath, Surat Gujarat-395007	<p>Dr. Suban K Sahoo Assistant Professor, Department of Applied Chemistry</p> <p>E-mail: suban_sahoo@rediffmail.com; sks@chem.svnit.ac.in Contact No. : +91-9723220556</p>	<p>(1) To design and develop functionalized nanoparticles, fluorescent nanoclusters and/or semiconductor quantum dots (QDs) by using the biomolecules like BSA, DNA, polypeptides, Ova, lysozymes etc and/or commercially available polymers/dendrimers. Then, the nanoparticles will be further bioconjugated with some suitable chelating agents like catechol, pyridoxal, kojic acid etc to develop nanosensors selective towards the target metal ions, mainly the rare-earth and heavy metal ions.</p> <p>(2) New synthetic methods will be developed for the synthesis of nanomaterials. Also, the developed nanosensors will be chemically modified over the cellulose strips, glass surface, silica gel for the on-site detection by naked-eye and other applications.</p> <p>(3) The developed colorimetric and fluorescent nanosensors will be integrated with the smartphone to develop a low cost and on-site assays to monitor the target analyte. A portable device will be fabricated which can be integrated with the smartphone to analyse the optical response of nanosensors in the presence of target analytes. The camera of the smartphone will be used to capture the images. Any changes in the color of the nanosensors in the presence of target analytes</p>	Rs. 46.5936 lakh 3 years	Not thrust area of MoM Rejected

S.No.	Project Title	Institution	Principal Investigator & Qualification.	Objectives of the project	Project Cost & Duration	Remarks of the Committee
				will be analysed by recording the RGB (red, green and blue) values/image intensities by using some application Apps/software installed in the smartphone. The calibration of the assay will be done and verified by doing on-field analysis of real environmental and biological samples.		
23.	FEASIBILITY STUDIES OF EXTRACTION OF RARE EARTH MINERALS(APATITE AND BASTNASITE) AND OTHER LEAN SOURCES OF RARE EARTHS	Jawaharlal Nehru Technological University (JNTUH),Hyderabad.	Dr. B. Rama Devi JNTUH, Hyderabad. Department of Chemistry Jawaharlal Nehru Technological University (JNTUH), Hyderabad. (Email & Mobile No.) : bhoomireddyramadevi@gmail.com , mobile: 9440029770	<ul style="list-style-type: none"> Extraction of REs will be carried employing solvent extraction and organophosphorus based in exchange resin methods Synthetic/real aqueous feed solutions containing mineral acid and rare earth elements of appropriate concentration Optimization of acidity of aqueous phase and extractant concentration for maximizing percentage extraction of metals Selection of possible separation conditions with respect to acidity and extractant concentration Determination of separation factors for one metal over the others Construction of extraction isotherms for determination of number of theoretical stages for the separation of HREs at a chosen phase ratio (McCabe- Thiele plot) Counter current extraction simulation studies based on McCabe Thiele plot data Optimisation of stripping conditions with respect to acidity and type of stripping reagent for re-extraction of metals from loaded organic phase Stripping isotherm studies Counter current stripping simulation studies These studies results in separation one metal or group of metals from others Finally, presentation of process flow sheet for the separation of HREs 	Rs. 456.824 Lakhs 3 years	Academic in nature. No direct commercial utility as a outcome of project. Rejected

S.No.	Project Title	Institution	Principal Investigator & Qualification.	Objectives of the project	Project Cost & Duration	Remarks of the Committee
24.	FEASIBILITY STUDIES ON COAL GANGUE FOR GEOTECHNICAL AND GEO-ENVIRONMENTAL APPLICATIONS	NIT, Warangal Telangana	Dr. Arif Ali Baig Moghal Associate Professor Department of Civil Engineering National Institute of Technology, Warangal – 506004 (Email & Mobile No.): reach2arif@gmail.com; mob:9989677217	<p>To identify the international and Indian state of knowledge for the use of Coal gangue in geotechnical applications.</p> <ul style="list-style-type: none"> <input type="checkbox"/> To perform comprehensive characterisation of coal gangue including geotechnical, physical, chemical, mineralogical and morphological characterisation. <input type="checkbox"/> To examine the strength characteristics of coal gangue by performing UCS and CBR tests and assess the improvement in strength with the addition of a novel additive, NCS. <input type="checkbox"/> To evaluate the compressibility and hydraulic conductivity of coal gangue to check its feasibility as a landfill liner material. <input type="checkbox"/> To study the influence of NCS on Compressibility and Hydraulic Conductivity of coal gangue. <input type="checkbox"/> To assess the potential threat posed by mobilization of Trace metal elements from Coal Gangue and to check the feasibility of using NCS as sorbent in immobilisation of trace metal elements from coal gangue <p>To identify the international and Indian state of knowledge for the use of Coal gangue in geotechnical applications.</p>	Rs. 25.45463 Lakhs 3 years	Pertains to Ministry of coal. Rejected
25.	Harnessing REE Mineralization (britholite, allanite and associated REE- minerals) of the Phenai Mata Igneous Complex,	Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur	Dr. Kirtikumar R. Randive Associate Professor Department of Geology	<p>(i) To evaluate the mineralization potential of the layered gabbros and allied rocks of the PMIC for commercial exploitation of the REE-minerals, and</p> <p>(ii) To establish a protocol for low-cost extraction of REE-rich mineral phases, namely, britholite, allanite and synchysite occurring in the</p>	Rs. 76.749 Lakhs 3 years	The proposal background is not clear regarding the resource of REE at PMI Rejected

S.No.	Project Title	Institution	Principal Investigator & Qualification.	Objectives of the project	Project Cost & Duration	Remarks of the Committee
	Gujarat: A laboratory scale process development for REE enrichment.		RashtrasantTuka dojiMaharaj Nagpur University, Tel (O): 0712-2532411 Mobile: 09850827151 Email:randive101@yahoo.co.in	PMIC.		
26.	Heavy density Red Mud Blocks for y-Ray Attenuation	CSIR AMPRI Bhopal	Dr. ShabiThankarajS alammal, Scientist, CSIR-AMPRI Bhopal Mob:+91 8754743511 E-mail:tsshabi@ampri.res.in, tsshabi@gmail.com	The main objective of this project is to fabricate heavy dense sintered red mud blocks for high energy γ-ray shielding applications. This main objective articulates into few specific objectives (SO).The amount of works involved in each specific objective is discussed in the methodology section.	Rs. 37.0786 lac 3 years	No red mud projects accepted till submission of report by JNARDDC on red mud. Rejected
27.	Identification of Rare Earth Elements in washery rejects and tailings	CSIR – Central Institute of Mining and Fuel Research, Barwa Road, Dhanbad, Jharkhand, 826015	Dr K M P Singh, Project Leader, Senior Scientist, Coal Preparation Division, FE-SEM Lab.	The main objective of the study is Identify and Quantify the presence of REE's in Washery rejects and Tailings.	Rs.166.0 lakh	Lacks novelty with only academic exercise. Rejected
28.	Integrated Geological, Geochemical and Geophysical studies for the delineation of Chromitite extensions inNuggihalli Schist Belt and	CSIR-NATIONAL GEOPHYSICAL RESEARCHINSTITUTE Hyderabad, Telangana state, INDIA	Dr P.V. Sunder Raju; Principal Scientist Email: perumala.raju@gmail.com ; 09490748152	Multi-Parameter Geophysical Surveys (Gravity and Magnetic, CSAMT, EM, and Electrical methods) to delineate the mineralized zones. To delineate the subsurface structure and identify the concealed chromite mineralization and its extension. To characterize the geochemical and geophysical expression of the deposit and alteration footprints	Rs. 78.000 lakh 3 years (Rs.39 lakh + Rs.39 lakh)	Recommended for PERC

S.No.	Project Title	Institution	Principal Investigator & Qualification.	Objectives of the project	Project Cost & Duration	Remarks of the Committee
	implications for Ni- Cu \pm PGE mineralisation	& <i>Indian Institute of Science, Bangalore</i>	(O)040-27012446 Dr Sajeev Krishnan Associate Professor Centre for Earth Sciences (CEaS), <i>Indian Institute of Science,</i> Bangalore 560 012, India E-mail: sajeev@iisc.ac.in krishnansajeev@gmail.com Tel: (+91) 80-2293-3404	for the presence of Ni-Cu and PGE. To characterize the mineralogical alteration signature and variations in mineral chemistry. A relook on the ultramafic-mafic components of Aladahalli for seeking Ni and PGE associations. Antharghatta-Kalangavi areas to the NNW of Arisikere in the northerly extensions of NSB so as to seek chromite and PGE potential at depths. Mafic-Ultramafic suites of Kadakola (Tata) and Karya (MML) for possible chromite ores and Ni and PGE. The mafic-ultramafic association with chromite in Lalithadripura-Varuna are southeast of Chamundi granite (southerly extensions of NSB) also forms a promising target area for PGE.		
29.	Integrative Metabolic pathway model for Biomining applications using hydrothermal and deep-sea microbial consortia	CSIR-National Institute of Oceanography, Dona Paula, Goa - 403004 & CSIR-Central Institute of Mining and Fuel Research	Dr.C. Mohandass, National Institute of Oceanography Email Address:cmohan@nio.org Mobile No./Telephone/fax number: 9422415648/0832-2450414/0832-2450602/603 Dr.K.K.K. Singh, Natural resource & Environment Management, Barwa Road, Dhanbad - 826015, Jharkhand	1. Suitability of shallow water hydrothermal vent and deep sea bacteria on bioleaching 2. Characterization of potential bioleaching strains for its better efficiency 3. Genome annotation and metabolic pathway identification in biomining 4. Developing a novel bioreactor system for biomining using microbial consortia in controlled environment .	Rs. 253.92 lakh 3 years	Not thrust area of MoM Rejected

S.No.	Project Title	Institution	Principal Investigator & Qualification.	Objectives of the project	Project Cost & Duration	Remarks of the Committee
			Email Address: kkksingh@cimfr.nic.in Mobile No./Telephone/ fax number: 9431912661/ 91-326-2296021/ 91-326-2296017/25/33			
30.	Investigation of High Wear Resistant, Thickness, Low Porosity Thermal Spray Coatings for Centrifugal Slurry Pump	DEPARTMENT OF MECHANICAL ENGINEERING SARDAR VALLABHBHAI NATIONAL INSTITUTE OF TECHNOLOGY SURAT-395007, GUJARAT, INDIA.	Dr. Bharatkumar Mohanbhai Sutaria Associate Professor, Mechanical Engineering Department, Sardar Vallabhbhai National Institute of Technology, Mobile-09427421615, E-Mail: bms@med.svnit.ac.in	<ul style="list-style-type: none"> ➤ Study of the slurry pump wears characteristic in mining applications and strategy to mitigate it. ➤ Design and development of the Coriolis wear tester based on the requirement of particle size distribution, the concentration of slurry, slurry velocity and variable particle impingement angle. ➤ Development of the high thickness, low porosity, and high hardness thermally sprayed coating for slurry wear resistance in the centrifugal slurry pump. ➤ Prediction of the wear in the slurry pump to properly maintain and service to decrease the downtime. 	Rs. 28.45400 Lakh 3 years	Resubmit with consent letter from industry. Recommended for PERC
31.	Investigation on Performance of Load-Haul-Dump Machines in Underground Mines and Improvement of its Availability and Optimum Utilization using Reliability	National Institute of Technology Karnataka	Dr. M. Govinda Raj Professor Department of mining engineering 0091-9480401160(M) Email: mandelaraj	1. To undertake field investigations in underground metal mines (M/s Hutti Gold Mines Limited and M/s Hindustan Zinc Limited etc.) and collect data of LHD performance with respect to equipment breakdowns and prevailing maintenance practices. 2. To estimate the operational reliability of LHDs with improvement in availability and optimum	Rs. 22.34 lakhs 3 years	Academic exercise with no direct commercial application. Rejected.

S.No.	Project Title	Institution	Principal Investigator & Qualification.	Objectives of the project	Project Cost & Duration	Remarks of the Committee
	Analysis, Cost-benefit Analysis and Simulation Modelling.		@88gmail.com	<p>utilization of equipment under various operational constraints (mining related, machine related and automation related).</p> <p>3.To identify sub-systems of the LHD such as Engine, Break System, Bucket and boom, Tire or Wheel, Hydraulic System, Electrical System, Transmission System and Mechanical System, which have sub-optimal performance and explore the possibilities for suitable design/ maintenance improvements to enhance reliability.</p> <p>4.To estimate the theoretical probability distributions such as Exponential, 1-Parameter Weibull, 2-Parameter Weibull, 3-Parameter Weibull distributions for goodness of-fit of LHDs by plotting data set of distribution curves for each sub-system using Kolmogorov-Smirnov (K-S) test, Maximum Likelihood (ML) test and Statistic U-test (Chi-Squared).</p> <p>5.To improve the lifetime of LHDs in underground metal mines using reliability prediction techniques such as RBD, FMEA, FTA and MKV with the aid of 'Isograph Reliability Workbench 13.0' and other such software.</p> <p>6.To undertake a cost effective analysis of LHDs and its validation for the different operational scenarios by developing Life Cycle Cost (LCC) models.</p> <p>7.To compare the performance of LHDs in terms of reliability and cost relationships operating under different field conditions in underground coal/metal mines.</p>		

S.No.	Project Title	Institution	Principal Investigator & Qualification.	Objectives of the project	Project Cost & Duration	Remarks of the Committee
32.	Investigations on the Phase Transformation During the Thermal Treatment of Various Grades of Indian low grade iron Ore (BHJ)	National Institute of Technology Jamshedpur	Dr Ranjit Prasad Associate Professor 0657-2374207, 08986882563, ranjit.met@nitjsr.ac.in , ranjitnitj@gmail.com	a. Characterization of low grade iron ore (BHJ) samples from different locations in India. b. Investigation on the influence of varying reduction potential on the mechanism and kinetics reduction BHJ.	Rs. 49.875 lakhs 3 years	Pertains to Ministry of Steel. Rejected
33.	Microwave assisted reduction of Ilmenite: An innovative approach for control of fines generation and maximization of solid-liquid separation	CSIR-National Institute for Interdisciplinary Science & Technology Thiruvananthapuram	Dr. K. JAYASANKAR (PI) Senior Scientist, Minerals & Metallic Materials Section Materials Science & Technology Division LANDLINE : 0471-2515313 Mobile: +91-9778060563, Email: jayasankar@niist.res.in	To develop the microwave assisted Process Intensification for ilmenite reduction and it will lead to management of fines generation during processing of ilmenite for maximizing solid-liquid separation and also aims at enhancing efficiency of hydrocyclone separation of iron oxide and ilmenite.	Rs. 40.9 lakh 2 years	Recommended for PERC
34.	Pilot Scale demonstration of an Ecofriendly disposal system for Iron ore tailings	R&D Centre, NMDC Limited Uppal Road Hyderabad	Mr. Rajan Kumar – Principle Investigator Jt. General Manager (MP-R&D) R&D Centre, NMDC Limited Uppal Road, Hyderabad – 500007, Telangana Email: rajankr@nmdc.c	Not mentioned; incomplete project	Rs.1005.30 lakh	Incomplete project Rejected

S.No.	Project Title	Institution	Principal Investigator & Qualification.	Objectives of the project	Project Cost & Duration	Remarks of the Committee
			o.in; Cell-9490760017			
35.	PREDICTION OF HEALTH RISK IN INDIAN SURFACE MINESBASED ON HEALTH GUIDANCE CAUTIONZONE (HGCZ)"	National Institute of Technology Karnataka Surathkal	Dr.MangalpadyAr una Associate Professor, Department of Mining Engineering 0824-2373374 9449066672(M) arunamangalpad y@gmail.com	<ul style="list-style-type: none"> To carry out Ergonomic Assessment of Musculoskeletal Disorders. To evaluate the whole body vibration (WBV) of the HEMM operators and to assess the potential health risk. <p>To evaluate the foot transmitted vibration (FTV) of the operators working on vibrating platforms and to assess the potential health risk.</p> <ul style="list-style-type: none"> To assess the contribution of the individual component of a job cycle of a machinery/ equipment operation on overall severity of whole body vibration exposure 	Rs. 33.925 lakh 3 years	Not thrust area of MoM. Rejected
36.	Process development for preparation of value added products like Nano iron oxide and Silica Sol (> 99% SiO ₂) from Lean Grade Iron Ore Slimes by Hydrometallurgical route	NMDC Limited, Hyderabad	Dr.C.KesavaRao Tel.-91-040-27170224 Mob.:+91-9491067960	In view of the utilization of Lean grade Iron Ore slimes of Donimalai mines, a process will be developed for Preparation of Nano Iron Powder from Lean Grade Iron Ore Slimes. After recovery of iron values from Lean Grade Iron Ore Slimes, <u>35% - 40%</u> of silica dioxide is present in rejects and For further utilization of Lean Grade Iron Ore Slimes, process will be developed for preparation of Silica Sol from Lean Grade Iron Ore Slimes(with >99.0% purity of Silica dioxide) through hydrometallurgical route.	Rs. 110.00 Lakh + 19.80 lakh= Rs.129.80 lakh 3 years	Pertains to Ministry of steel. Rejected
37.	Process Intensification of Iron removal from Reduced Ilmenite in Oxygen Leaching through Multifunctional Reactor for	Department of Chemical Engineering, National Institute of Technology, Calicut	DrPanneerselvam Ranganathan Assistant Professor, Department of Chemical Engineering,	The overall aim of this proposal is to set up of a bench-scale multifunctional reactor for improving metallic iron removal rate from the reduced ilmenite in oxygen leaching process. Further, the performance of proposed reactors will be evaluated.	Rs. 32.1823 lakh	Pertains to Ministry of Steel Rejected

S.No.	Project Title	Institution	Principal Investigator & Qualification.	Objectives of the project	Project Cost & Duration	Remarks of the Committee
	Synthetic Rutile Production		Email: pranganathan@nitc.ac.in and Mobile no: 8138829477			
38.	Process optimization on mechanical properties of AluminiumOxide, Zirconia Nano particles Reinforced Nickel based Metal Matrix composites	Hindusthan Institute of Technology, Coimbatore, Tamil Nadu	Dr.S.R.Rajabalayan, Prof. & Head/ Department of Mechanical Engineering Mob.:9443924797 E-mail:rajabalayanan@mail.com	The objective of this research proposal is to obtain a high strengthened material with increased toughness and stiffness, but also a higher resistance to creep, corrosion, wear compared to conventional materials. In addition, further reinforcement of particulates to produce hybrid composites will enhance other specific properties such as low thermal expansion with high thermal stability and good electrical conductivity.	Rs. 27.12650 lakh 3 years	Lacks novelty. Rejected
39.	Processing of strong, wear and corrosion resistant Al-Cu-SiC/ZrB2 alloy composites for mining applications	National Institute of Technology Warangal Department of Metallurgical and Materials Engineering	Dr. Brahma RajuGolla Assistant Professor, Department of Metallurgical and Materials Engineering Mobile: +91-8332969389 E-mail: gbraju121@gmail.com	Optimize hot press conditions to obtain dense Al-5wt.% Cu-20vol.% SiC- (0-10 vol%)ZrB2. Achieve better mechanical properties (hardness and strength properties).→ Improve wear and corrosion resistance of Al-5wt.% Cu-20vol.% SiC- ZrB2.→ Characterize the Al alloy composites thoroughly and the understand the related→ mechanisms. Compare the performance of Al-5wt.% Cu-20vol.% SiC- (0-10 vol%)ZrB2→ composites and other Al based composites (using various other processing techniques) reported in the literature. Find the suitability of Al-5wt.% Cu-20vol.% SiC- ZrB2 for mining and any other→ potential applications.	Rs. 50 lakh 3 years	Generic in nature and lacks focus and direct commercial application Rejected
40.	PROPOSAL FOR ESTABLISHING TL/OSL LABORATORY AT NATIONAL INSTITUTE OF ROCK MECHANICS (NIRM)	National Institute of Rock Mechanics	Dr. Biju John, National Institute of Rock Mechanics Contact Details : b_johnp@yahoo.co.in +91 9481057202	To cater to dating needs of faculty, students, and researchers (both NIRM and others in the country alike) working in the areas of sedimentology, stratigraphy, structural geology, geomorphology, tectonic geomorphology, active tectonics, neotectonics, mining and underground space technology.	Rs.266.515 lakh 5 years	Not thrust area of MoM. Rejected

S.No.	Project Title	Institution	Principal Investigator & Qualification.	Objectives of the project	Project Cost & Duration	Remarks of the Committee
41.	Research and Development of ZnO Based Integrated Device for Deep UV and Gas Sensing Applications Related to Mining”	Indian Institute of Technology Indore	Dr.Vipul Singh, Associate Professor, Discipline of Electrical Engineering, Ph: +91-732-4306-594 Email: vipul@iiti.ac.in	<p>Development of a flexible and low cost dual function device for the safety of mine workers which will not only detect highly hazardous gases in the mines but also function as a fire detector.</p> <ul style="list-style-type: none"> <input type="checkbox"/> To improve the device selectivity for a particular toxic gas. <input type="checkbox"/> To reduce the device response time. <input type="checkbox"/> To improve device sensitivity, so that it can sense even a small amount of toxic gas in the mine. <input type="checkbox"/> To reduce the power consumption of the device to enhance the battery life. <input type="checkbox"/> To reduce the operating temperature of the device. 	Rs. 53.4624 lakh 3 years	Proposal is Generic in nature. Rejected
42.	Research studies on performance improvement measures of Mine Workers using simulated Training methods in Mining Industry	NATIONAL INSTITUTE OF TECHNOLOGY WARANGAL Telangana	Dr.Anjaneyulu L Professor Department of Electronics & Communication National Institute Technology (NIT) Warangal – 506004, Telangana India Ph : 8332969355 , E-mail : anjan@nitw.ac.in	<p>a. Identification of key performance parameters b. Modification of simulator systems accordingly c. Collection of data, based on the user machine interaction d. Analysis of the collected data, compilation of results</p>	Rs.187.26 lakh 3 years	Not thrust area of MoM. Rejected
43.	Soil fertility revival and vegetation induction through potential bacterial strains and their bioactive metabolites in open cast mining contaminated areas with special reference	CSIR-National Institute for Interdisciplinary Science and Technology (NIIST), Thiruvananthapuram 695 019, Kerala.	Dr. Dileep Kumar. B. S., Senior Principal Scientist, Agro-Processing and Technology Division, Mobile:9496155111; E-mail:	<p>Identification of the site and evaluation of the soil fertility deterioration, pH, contamination level, plant and microbial estimation. Selection of microbial strains for revitalization of the polluted sites. An emphasis will be given for endophytic/rhizosphere Bacillus, Pseudomonas and Streptomyces species. Studies under stimulus condition in laboratory, gnotobiotic and nursery condition for the soil fertility revival and vegetation development with the soil collected from the identified sites. Treatment of the contaminated site with the</p>	Rs.49.598 60 lakh	Not thrust area of MoM. Rejected

S.No.	Project Title	Institution	Principal Investigator & Qualification.	Objectives of the project	Project Cost & Duration	Remarks of the Committee
	to Meghalaya coal fields		kumardileep@nii st.res.in	potential selected organisms and their bioactive metabolites for soil fertility revival and plant growth induction besides pH maintenance. Further soil fertility improvement through the bio-formulation developed from the selected strains. Identification of the metabolites from the introduced strain responsible for soil fertility and vegetation induction and pH maintenance. Development of a biological formulation of bacterial strains and/or their bioactive metabolites for soil fertility and vegetation induction and pH maintenance.		
44.	Study of China clay deposits developed over various host rocks in different parts of Odisha, with special reference to heavy mineral assemblage	Department of Geology Ravenshaw University, Cuttack	Dr. Patitapaban Mishra Assistant Professor of Geology Department of Geology Ravenshaw University Cuttack	Preparation of exposure map of typical china clay deposits formed under different Geo-environment, in 1:20,000 scale. Mineralogical and geochemical characterisation of China clay sample from different deposits of Odisha developed from various host rocks like Granite, Sandstone and Gneisses etc. Recovery of valuable heavy/valuable mineral from different set-up using Hydrocyclone. Quantification of valuable trace and REE constituents in different heavy mineral assemblages from different set-up.	Rs. 35.0784 Lakhs 3 years	Academic & generic in nature. Rejected.
45.	To develop an auto fan pressure determination program to supply adequate air and enhance safety at workplace in imminent danger situation”	Acharya Institute of Technology Bangalore	Dr. Mahesh Kumar Shriwas Professor Department of Mining Engineering Acharya Institute of Technology Bangalore – 560107 Email: maheshshriwas@acharya.ac.in Contact (+91) 9131959747	<ul style="list-style-type: none"> To develop an auto fan pressure determination program in integration with the proposed in-house ventilation simulator. Develop logics for auto fan pressure determination program with the optimum speed or blade setting Write a computer based program for selecting the optimum fan operation point Develop an in-house ventilation simulator and integrate with Run a hybrid program to manually check the efficacy and efficiency 	Rs. 14.58 lakh 3 years	Not thrust are of MoM. Rejected

S.No.	Project Title	Institution	Principal Investigator & Qualification.	Objectives of the project	Project Cost & Duration	Remarks of the Committee
46.	Treatment of Acid Mine Drainage for Heavy Metal Removal	Indian Institute of Technology Mandi, Kamand Campus, VPO Kamand,	Dr.SumitSinha Ray, Assistant Professor School of Engineering Indian Institute of Technology Mandi Telephone & Mobile No. :+91-1905-267265; +91-9748159620 E-mail: sumitsinha@iitmandi.ac.in	<ul style="list-style-type: none"> To evaluate several inorganic and organic media for their ability to remove heavy metals from AMD through physico-chemical processes such as adsorption, precipitation etc., consequently to investigate the performance of PRB employing effective inorganic and organic media for removal of heavy metal from AMD (PART A) To develop biopolymer filter membrane via <i>Solution Blowing</i> technique to adsorb heavy metals like Cu, Fe, Zn, Mn, Ni, Pb, As etc. (PART B) And Finally, to incorporate membrane filtration scheme with AMD effluent treatment, where the PIs envisage to fabricate a final prototype for AMD treatment. (PART C). 	Rs. 48.7546 lakh 3 years	Resubmit with consent letter from related industry. Recommended for PERC
47.	Ultrasound-based Technique for the Measurement of the multi-Layer Liquid Depths at high temperature	Indian Institute of Technology Varanasi	Dr.Randhir Singh (PI) Assistant Professor Department of Metallurgical Engineering, Indian Institute of Technology BHU, Varanasi Email: randhir.met@itbh.ac.in Tel:+91-8093919229	<ul style="list-style-type: none"> To develop an alternative to the existing, dipstick-based liquid level measurement with a new method which is fast, accurate and is less-intrusive. The proposed method would enable a better process control hence, a better product quality and efficiency. 	Rs. 46.35 Lakhs 3 years	Recommended for PERC

S.N o.	Project Title	Institution	Principal Investigator & Qualification.	Objectives of the project	Project Cost & Duration	Remarks of the Committee
48.	Utilization of low grade and fine size coal lying at coking coal washeries for metallurgical purpose after suitable beneficiation	CSIR – Central Institute of Mining and Fuel Research Digwadih Campus, P.O. FRI, Dhanbad, Jharkhand	Mr.U.S Chattopadhyay, Project Leader Principal Scientist, Coal Preparation Division Email: uscimfr@gmail.com	The main objective is to utilize the low grade and fine coal lying at different coking coal washeries for metallurgical purpose after suitable beneficiation.	Rs.72.29 lakh 2 years	Pertains to Ministry of coal. Rejected