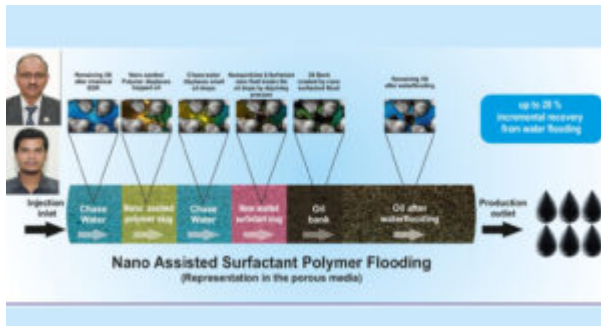


Usage Of Nanoparticles Can Increase Reservoir Oil Recovery By 7 Per Cent : Research by Ashis Sinha



IIT (ISM) Researchers found that by using Nanoparticles oil recovery from reservoirs can be enhanced by 7 per cent.

A team of researchers of the Petroleum Engineering Department of Dhanbad-based premiere technical cradle, IIT (ISM) has conducted research that can ensure enhanced recovery of oil lying trapped in the pores of rock using Nanoparticles.

The findings of research conducted at a cost of Rs 39 lakh funded by the Institute of Reservoir Studies (IRS), ONGC Ahmedabad by the three-member team of IIT (ISM) led by Ajay Kumar Mandal, Head of the Department of Petroleum Engineering and assisted by Neetish Kumar Maurya, assistant professor and Dinesh Modi, Junior Research Fellow (JRF) during 2019-21 revealed that use of Nanoparticles can increase oil recovery up to the tune of 7% or more.

Divulging details about the research, Dr Ajay Kumar Mandal, said, "Only around 20-30% of oil can be recovered easily from the reservoir while the recovery of remaining 70-80% trapped oil requires additional impetus in the form of water, chemical injection or thermal methods.

"Oil stuck up in the pores of rocks turns immobile- thus the usage of Nanoparticles which can travel deep into the rocks enhances recovery of such stuck up oil by mobilizing the oil droplets into the production well" further explained Dr Mandal and added that the research team visited the IRS ONGC Ahmedabad thrice during the course of research to collect information and also to collect crude oil, formation water and rock samples.

Divulging more details about the step-by-step progress of the research, Dr Mandal said, In the first step experimental investigation to screen suitable nanoparticle for enhanced oil recovery (EOR) was carried out during which its interaction with crude oil, formation water and rock surfaces were carried out.

"The team found that silica nanoparticle Nanofluid is stable at oil reservoir condition as it provides favourable interaction with reservoir rock and fluid for Enhanced Oil Recovery", added Dr Mandal.

"In the second step, we designed the chemical slug to be injected in the oil reservoir as nanoparticles can be injected in the oil reservoir alone or in synergy with surfactant and other chemicals. The chemical slugs were then tested for wettability improvement, Interfacial tension reduction and other Enhanced Oil Recovery design criteria "further explained DrMandal.

"In the final step, actual potential of incremental oil recovery was established by injecting these chemical slugs in core flooding experiment," said Assistant professor Neetish Kumar Maurya and added that Small rock samples, representative of reservoir rocks, were placed in core holders.

"Outcome of this research established that we can further improve the efficiency of the

chemical injection process in oilfields by using nanomaterial for enhanced oil recovery," said Maurya.

Regarding the cost-effectiveness of new process of enhanced oil recovery using nanoparticles Maurya said, "We did not perform a cost analysis and only feasibility study was carried out as this technology is still in a nascent stage, however, many researches are working to produce nanomaterial from alternative sources to make the production cheaper and efficient".



Dr. Maurya speaking at a podium during a seminar on nanotechnology.



Dr. Maurya : Nanotechnology is a multidisciplinary technology which is the combination of 12 different technologies. It is a combination of physics, chemistry, biology, computer science, etc. Nanotechnology is a technology which is used to produce nanomaterials. Nanomaterials are used in various fields like medicine, agriculture, etc. Nanotechnology is a technology which is used to produce nanomaterials. Nanomaterials are used in various fields like medicine, agriculture, etc.

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Dr. Maurya receiving a certificate of appreciation from a woman during a seminar.

Elated to be acknowledged as the 'Most Effective Principal', Gangwar said, "this award is a recognition of the collaborative efforts put in by the staff and students who have left no stone unturned to ensure that the school reaches its pinnacle of success." He extended his heartfelt gratitude to all the stakeholders for their support and encouragement.



Ec Announces Schedule President Election; Poll To Be Held On July 18



JNS: Election Commission of India has announced that Election of the 16th President of India is scheduled to be held on 18 July this year. The term of office of President Ram Nath Kovind is ending on the 24 July this year.

Chief Election Commissioner Rajiv Kumar on Thursday, said, notification for the poll will be issued on the 15 of June and the last date for filing nominations will be the 29 June. Scrutiny of nomination papers will take place on the 30 June. "The poll will be held on the 18 of July while counting will be taken up on the 21st of July," he added.

The election will be held by secret ballot in accordance with the system of proportional representation as per the Constitution. The Commission is taking all necessary measures to ensure a free and fair poll, said Kumar.

The President is elected by an electoral college comprising elected members of Lok Sabha, Rajya Sabha and State Legislative Assemblies. It also includes the Legislative Assemblies of Delhi and Puducherry.

The Secretary-General of Rajya Sabha will be the Returning Officer for the present election. He said, polling will be held in the Parliament House and the premises of the State Legislative Assemblies, said CEC.

The total number of electors will be 4,809 including 776 Members of Parliament and 4,033 Members of Legislative Assemblies. The total value of the votes will be 10 lakh 86 thousand 431, he said.

All COVID precautions and protocols will be followed on the day of polling and counting. The Election Commission has directed the Election Officers to use biodegradable material to avoid the use of plastic to make the election process eco-friendly, he said.



Dps Bokaro Student Shivankur Bags Gold In Athletics Championship



JNS: Shivankur Suryavanshi, a class 12 student of Delhi Public School, Bokaro Steel City exhibited a rare combination of strength, power, timing, co-ordination and precision to bag gold medal in the 16th Jharkhand Junior State Athletics Championship held at JRD Tata Sports Complex, Jamshedpur from June 3 to 5, 2022. He has brought laurels to his Alma Mater and made his city proud by getting the first position in the Javelin Throw (U 18) category. He will now represent his State in the Junior National Athletics Championship in the Javelin Throw (Under 18 Boys) category to be held in Guwahati later this year.

Teams from all 24 districts of Jharkhand participated in this competition which was organised by Jamshedpur Athletics Association. Congratulating Shivankur on this success, Principal DPS Bokaro, A.S. Gangwar said, "Your achievement is exemplary and you have inspired others to dream big."

"DPS Bokaro has always worked on ensuring the all round development of the students. Along with good and quality education, it is also necessary that children have an inclination towards co curricular activities for holistic development," he added.



University Of Jerusalem Calls For Master In Environmental Economics & Management



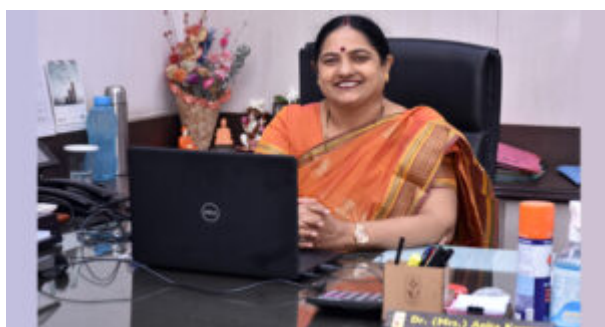
Jerusalem: The M.Sc. program in Environmental Economics & Management provides a deep understanding of the interaction between economic systems and the environment. It equips students with practical tools for internalizing environmental and natural resource considerations in policy and managerial decision-making.

The master's program focuses on economic issues in the areas of environmental and natural resources, marketing, and finance. These include public economics and government intervention to control environmental effects; planning of efficient extraction and use of natural resources; allocation of water and land resources; regulation of agricultural product

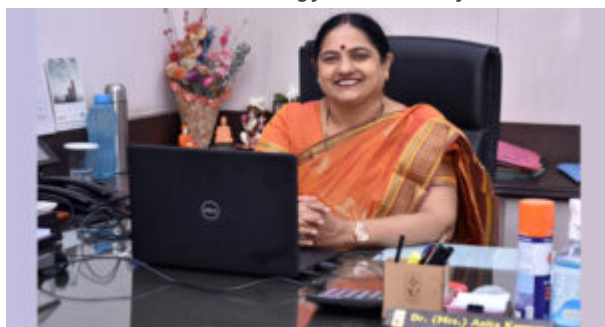
marketing in local and export markets; industrial organization; economics of the family; mechanism design; game theory; political economy, and more. Students participate in research as part of their master's thesis.

Taught entirely in English, the master's program offers three study tracks: a thesis track, a thesis track in the area of marketing, and a non-thesis track. The thesis tracks require a scope of 32 credits, of which 2 are seminars in Environmental Economics and Management. The non-thesis track requires a scope of 44 credits, of which 4 are theoretical seminars.

The master's degree studies extend over two years. Securing a supervisor in advance is not required. However, within 10 months from the beginning of the studies, the student should find a supervisor and submit a research plan, otherwise, he/she can continue the program in the Non-Thesis Track.



Ves Inks With GlobalGyan Academy To Launch New-Age Autonomous Courses



Mumbai: Vivekanand Education Society's College of Arts, Science and Commerce (Autonomous), an iconic education institute has partnered with a leading professional learning firm, GlobalGyan Academy of Management Education to launch its new autonomous courses, including undergraduate and post-graduate degrees. The courses aim to meet the talent requirements across industries through a flexible,

holistic and well-groomed curriculum. The partnership marks the joining hands of two education stalwarts of India that will groom students to make them ready for employment and entrepreneurship.

The new courses are designed around industry-oriented, work-integrated, NEP (New Education Policy) aligned modules across key sectors like automation, data science, data analytics, ecommerce, governance, as well as banking and finance. The innovative courses are developed to prepare the future workforce to pursue new career opportunities in emerging industries. The new programs aim to bridge India's gaping gap of college to cubicle. Along with traditional learning, the courses will provide a myriad of benefits such as collaboration and leadership skills, application of emerging technologies, improved communication & persuasiveness, and an engagement with the corporate world through guest sessions, projects, and internships.

The autonomous courses will soon be admitting students for the academic year 2022-23. Students who have completed their Standard 12 examinations, from any stream, board and institute are eligible for these courses.

Speaking about the launch of the courses, Dr. Anita Kanwar, Principal, VES College said, "Companies no longer want inhibited professionals. We have worked hard in the last two years to get closer to the industry. Our launch of new courses in partnership with GlobalGyan is a testament to those efforts."

"The race for talent is now a global one. The programs being introduced by VES and GlobalGyan will address the country's massive skill gap among its youth. The innovative courses given as

a mixed model of hands-on training and industry-standard material will prepare students for high-demand career opportunities in industries like robotics, automation, Industry 4.0, and electronics,” she further adds.

Commenting on the partnership with VES, Srinivasa Addepalli – CEO & Founder, GlobalGyan said, “India’s talent gap can only be bridged through a collaborative approach between the corporate and academic worlds. We are excited to partner with VES, one of the oldest and esteemed institutes in India, in creating courses that will make our youth future-ready.”

Vivekanand Education Society’s College of Arts, Science and Commerce is NAAC Accredited College with an “A” Grade, permanently affiliated with the University of Mumbai. The institute has also been anointed with Autonomous status by UGC and the University of Mumbai for excellence in education. Being one of the lead colleges of Mumbai University with over 14 colleges under its cluster, VES is also a proud Signatory to the United Nations Global Compact PRME- Principles for Responsible Management Education. In creating a world-class institution that caters to the growing needs of students opting for varied career paths, VES has evolved into a massive ecosystem for education offering 29 courses which include 17 Under Graduate, 9 Post Graduate, and 3 Ph.D. courses.



Ism Researcher Finds Ways To Prevent Mine Fires, Explosions.

by Ashis Sinha



“How to reduce the risk of fire and explosion in mines and improve overall safety”– the findings of the study that was carried out by a team led by Devi Prasad Mishra, a professor of Mining Engineering Department of IIT-ISM may help in a big way.

Mishra, an Associate Professor of Mining Engineering Department of IIT (ISM) has conducted research on pulverized coal which can help to increase the safety of coal mines from the perspective of spontaneous combustion and explosion and risk management of coal mines.

The outcome of research titled ‘Physico-Chemical Characteristics of Pulverized Coal and their interrelations- a spontaneous combustion and explosion perspective’ can also have applications with regard to safety and risk management of process industries and utilities sector dealing with pulverized coal.

The research project worth Rs 21.45 lakh, funded by Science and Engineering Board of Department of Science and Technology (DST) has been conducted by Dr Mishra as a team in association with a faculty of Mechanical Engineering Department of IIT (Madras) Dr V Raghavan from 2017-2020.

The research findings helped the team to get knowledge about the particle size, exposed specific surface area and gas adsorption characteristics of coal of various particle sizes that in turn facilitated the mine management to take appropriate measures to prevent the occurrence of spontaneous combustion, mine fires and explosion in coal mines.

The study during which vivid investigation of coal samples collected from different mines of Steel Authority of India Limited (SAIL), Singareni Collieries Company Limited (SCCL) besides the mines owned by different subsidiaries of Coal India Limited (CIL) including Bharat Coking Coal Limited (BCCL), Central Coalfields Limited (CCL), Eastern Coalfields Limited (ECL), Northern Coalfields Limited (NCL), Western Coalfields Limited (WCL), Southeastern Coalfields Limited (SECL), Mahanadi Coalfields Limited (MCL) and Western Coalfields Limited (WCL) were conducted analyzed the interrelations between these parameters from spontaneous combustion and explosion perspective.

“This research generated insightful coal characteristics data of pulverized coal which can be useful for furthering research on spontaneous combustion and explosion involving pulverized coals” said Dr Mishra whose research interest is in Mine Ventilation & Environmental Engineering; Mine Fire and Explosion; application of CFD in Mine Ventilation & Environmental Engineering; Methane Drainage, CBM, UCG, stowing backfilling with fly ash/pond ash; characterization of fly ash/pond ash.

“This research can be extended to coarser mine size coals, which are generally found in goaf (mined out) areas of underground mines, coal stacks and waste dumps and prone to spontaneous combustion” further opined Dr Mishra while highlighting the need for further research in the area.

Elaborating about the advantages of the research Dr Mishra said, “This unique study which led to better understanding of the physio-chemical characteristics of pulverized coal also revealed the variations of bulk density, specific surface area and gas adsorption characteristics of coal with particle size”.

“The relationship developed in this research can help to determine the bulk density and specific surface area of pulverized coal of known particle size” summed up Dr Mishra adding that they visited several mines across the country during the course of research to analyze the pulverized coal.



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