



CFRI NEWSLETTER



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Established in November 1946, Central Fuel Research Institute is a unique Institute of its kind in India under CSIR, New Delhi to conduct research in different areas of Fuel Science and Technology with emphasis on coal and lignite.

Mission: Enhance the position of the Institute as a premier R&D centre for technology development and transfer by forging strategic alliance with other agencies and continuously strive for excellence in the area of potential expertise for generation of basic knowledge, innovation, and advanced concepts in science and technology for economic, efficient, and environmentally safe energy management.

WASHABILITY STUDY OF COAL SAMPLES (Bhushan Limited, Sundergarh, Orissa)

Section as well as composite seam coal samples showed that the washability potential of the coal is poor, based on theoretical yield obtained as the relative proportion of coaly bands are rather less than that of dirt present. The present study was confined to washability potential of the coal supplied by the sponsor and to predict the theoretical yield around 30 percent ash level targeted for sponge iron production.

DEVELOPMENT OF GAS TO LIQUID TECHNOLOGY

(CSIR Task Force Networking Projects)

In the gas to liquid technology process, the cobalt based alumina supported FT catalyst has been developed for wax synthesis. The catalyst is showing 77% selectivity towards C₅₊ with liquid hydrocarbon yield of 126.0 ml per M³ of syn gas converted.

COAL PREPARATION: THRUST AREAS

1. Developing Beneficiation Circuits, 2. Technical Audit of Washery, 3. Designing and Installation of Mini Flotation Plant, 4. Performance Evaluation of washery 5. Coal Sampling and Quality Monitoring, 6. Pilot plant Investigation for Commercial Evaluation, 7. Generation of Basic Data for Evaluation of Cleaning

Potentiality and 8. Treatment of Borehole Samples-Small and Large Diameter

ENERGY MANAGEMENT: CFRI NAGPUR

The Energy Management activity has got wide response from different Industries within Maharashtra. Presently the Energy Management Cell, Nagpur is conducting Energy Audit of M/s Century Rayon Ltd., Thane and Jalgaon Jila Sahakari Dugdh Sangh, Jalgaon. Number of projects in other sectors like mining and power are in pipeline. The proposals have been submitted to the industries from the region for the said audit.

COAL CHARACTERISATION: CFRI NAGPUR

Coal borehole received from CMPDI, Ranchi- in meters 335.25; Coal borehole processed in meters 1154.17; Sample prepared 2861; Sample analyzed 1320; MECL-Sample analyzed 190; GSI-Coal Borehole received in meters 30.05; Coal borehole processed in meters 4.35; Sample prepared 42; Sample analyzed 284; Private parties-Sample prepared 50; Sample analyzed 77.

SEMINAR ON GLOBAL COAL – 2005

An International Seminar on Coal Science and Technology: Emerging Global Dimensions (GLOBAL COAL-2005) was organized jointly

by CFRI and CMRI at Hotel Le Meridian, New Delhi during 12-13 April 2005. In this seminar 7 technical sessions were held in which 65 papers were included for presentation. Seven papers were read as special paper under Keynote address. Seminar was inaugurated by Dr Dasari Narayan Rao, Minister of States for Coal and Mines, Govt. of India, New Delhi. Other dignitaries present on the occasion of inauguration were Shri Sashi Kumar, Chairman, CIL, Shri P. C. Pareekh, Secretary, Min. of Coal, Shri Partha Bhattacharya, CMD, BCCL; Shri Bhaskar Bhattacharya, DGMS, Dr. R. A. Mashelkar, Director General, CSIR, New Delhi; Shri Chandan Roy, Director, NTPC; Shri Michio Nakajima, Mitsubishi, Heavy Industries, Japan. Delegates from India and Japan participated.



Inauguration of the seminar by Min. of State for Coal and Mines, Hon'able Dr. D. Narayan Rao

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1.D. P. Choudhury, J. George, S. K. Thakur, R. Sen, K. K. Mishra, A. K. Gangopadhyay, A. K. Bandopadhyay and S. K. Srivastava, Application of Instrumental Technique for Determining the Physico-chemical Properties of Airborn Particulate matter, Ind. J. Env. Prot., 23, 881-885, 2003 (Journal Published in 2004)

2.Mukherjee Samit and Srivastava S.K., Trace Elements in High Sulfur Assam Coals from the Makum Coalfield in the Northeastern Region of India Assam Coal, Energy & Fuels, 19, 882-891

3.Roy, S.K., Dutta, P., Nandi, L.N., Yadav, S.N., Mondal, T.K., Roy, S.C., Mitra, S., Samuel, P.,

The Influence of Support on Ammoxidation of 3-picoline over Vanadia Catalyst, J. Molecular Catalysis, A-Chemical, 223, 211-215, 2004

4.Dutta, P., Roy, S.C., Nandi, L.N., Samuel, P., Pillai, S. Muthukumar, Bhat, B.D., Ravindrarathan, M., Synthesis of Lower Olefins from Methanol and Subsequent Conversion of Ethylene to Higher Olefins via Oligomerisation, J. Molecular Catalysis A Chemical, 223, 231-235, 2004

5.Sarkar A, Rao, Ruma, Mishra, K.K., Sinha I.N., Particle Size Distribution Profile of some Indian fly Ash - a Comparative Study to Assess their Possible Uses, Fuel Proc. Tech., 86, 1221-1238, 2005

Dr. PANDIULA SAMUEL TAKES OVER AS ACTING DIRECTOR, CFRI

On completion of six years tenure of Dr Kalyan Sen, as Director on 15 April 2005, he was again appointed as Acting Director, CFRI till his retirement on 30th April 2005. On retirement of Dr Kalyan Sen, the senior most scientist F, Dr Pandiula Samuel was appointed as Acting Director, CFRI for the period 1st May to 30 June 2005.



Taking over of Charge of Acting Director, CFRI, Dhanbad by Dr. P. Samuel from Dr. Kalyan Sen

GLIMPSES OF GLOBAL COAL-2005

A video clipping of International Seminar on Global Coal-2005 held at New Delhi was shown to the audience of CFRI on 29.04.05.

LECTURE

1. Dr K. N. Bhattacharya, Scientist delivered a lecture on "An Introduction to Intellectual Property Right Management" on 05.05.2005.

2. Dr S. S. Tambe, Scientist, National Chemical Laboratory, Pune delivered a lecture on "Challenges before Indian Steel and Power Industries—Some Pragmatic Solution" on 14.06.2005.

ANTI TERRORISM DAY

Antiterrorism day was observed on 19 May 2005. All staff members assembled in the Ciborium hall at 11.00 a.m. to observe antiterrorism day and took pledge to fight against terrorism and violence to uphold and promote peace, social harmony and national integration.

NATIONAL TECHNOLOGY DAY

National Technology Day was celebrated on 11th May 2005. Prof. C. K. Das, Head, Material Science, Indian Institute of Technology, Kharagpur delivered the Technology Day Lecture on "Nano Silica in the Rubber and Plastic Composites". Dr P. Samuel, Actg. Director in his welcome address spoke on the need of on going micro entities for progress of the country.

NEW ADDITION IN LIBRARY

Two hundred fiftyseven books including thirty three Hindi Books, sixteen Annual Reports and twelve other Reports from various organizations were newly added in the present Library holdings. The disciplines of the Books are broadly categorized as Coal and Allied subjects, Encyclopedia of Energy, Environmental Pollution, Civil Engineering, Spectroscopy, Computer, Medical Science, Biochemistry, Microbiology, Physiology, Management and Social Science.

DEMONSTRATION

1. Shri Devashis Bhowmik and Shri Sudipta Pal Representative of TIHOTS, Kolkata made a

demonstration of their product Digital Visualizer and Digital Interactive board on 07.07.2005

2. Shri Dhiraj Kumar and Shri Jagat Kumar Representatives of Globus Infocom Ltd., Delhi made a demonstration of their product Digital Visualizer on 07.07.2005

NEW FACILITIES

Three facilities have been created in Chemicals and Liquid Fuel Division. 1. Four fixed bed SS tubular reactors, 2. High pressure slurry reactor (Maximum operating condition: reactor volume 100 ml., temperature 400°C, pressure 150 bar from M/s. Chemito Technologies, Nasik and 3. Surface area analyzer from SMART Instruments Company, Thane.

RECERTIFICATION FOR ISO-9001: 2000

Recertification Audit for ISO-9001:2000 was conducted by M/s. TUV (India) Pvt. Ltd., at CFRI HQ on 27th and 28th June 2005; at CFRI-Ranchi Unit on 29th June 2005; at CFRI Bilaspur Unit on 11th July 2005 and at CFRI Nagpur Unit on 12th July 2005. On 12th July 2005 accreditation for ISO-9001:2000 was announced. This certificate will be valid upto 2008. Auditors were Shri Ashok Dasgupta and Shri P. Sengupta.

PATENT INFORMATION: COAL AND ITS UTILIZATION

1. US Patent Appl. No. 20050081766, April 21, 2005

Title – Feeder for High Moisture Content Coal
Inventor – Melntosh, Malcolm John

Abstract – A feeder for high moisture content carbonaceous material, especially lignite, includes a housing (1) having an inlet (2) for introducing the carbonaceous material to the housing (1). The housing (1) has one or more converging sections (12a-12e) that are preferably of frusto-conical shape. A shaft (6) extends through the housing. Auger sections (8) define screw flights for transporting the carbonaceous

material through the housing. Auger sections (8) do not extend through the converging sections (12a-12e). At least one radially extending paddle extends from the shaft in each converging section. The feeder can be used to feed carbonaceous material to a high-pressure environment, such as a boiler.

WORLD AROUND

CHAMPIONING CHARCOAL OVER WOOD AS COKING FUEL

If people in Africa were to switch to charcoal as cooking fuel from wood, it would not only significantly reduce greenhouse gas (GHG) emissions but also save millions of lives, claim researchers. Led by Dan Kammen of the University of California, Berkeley, the scientists calculated the health and environmental effects of moving to new fuel use and land management strategies either gradually (over the next 50 years) or rapidly (within 10 to 15 years). The study suggests if current trends in fuel use in sub-Saharan Africa continue, the number of premature deaths among women and young children exposed to wood smoke from stoves will reach nearly 10 million by 2030, from about 4000,000 in the year 2000. What's more cooking fires will pump 6.7 billion tonnes of carbon into the atmosphere as GHGs in the next 45 years, they say (Science, Vol. 308, No. 5718).

Although Charcoal is the leading urban fuel in Africa and releases less indoor particulate matter with burned than wood, its use does not find much support from policy makers or environmentalists. This is because charcoal is made by covering a stack of wood with dirt and allowing it to smoulder for three to seven days – a process that is inefficient and polluting. On the other hand, charcoal production generates rural employment and so could be a blessing in poor regions. The researchers' model predicts that a shift to burning charcoal, combined with sustainable forest management and more efficient charcoal-production technologies, would avert some 3 million premature deaths

and reduce GHG emission by 65 per cent if implemented rapidly. Even if adopted gradually over 50 years, the move would delay 1 million deaths and cut GHG emission by 45 percent relative to simply carrying on as usual.

[Source- Down To Earth, May 15, 2005]

CFRI IN MEDIA

1. Infertile land flourishing after use of fly ash (*Dainik Jagaran 19.04.05*)
2. CMRI and CFRI awaiting new Director (*Dainik Jagaran 05.04.05*)
3. Green Chemistry need of hour (*Hindustan Times 22.04.05*)
4. CFRI Foundation Day celebration (*Dainik Jagaran 24.04.05*)
5. Some serious allegation of Shivsena's on CFRI (*Hindustan 27.04.05*)
6. Foundation Day of CFRI on 21st April (*Aaj 27.04.05*)
7. National Technology Day was celebrated at CFRI (*Hindustan 12.05.05*)
8. CSIR will be given the Status of University (*Prabhat Khabar 16.05.05*)
9. BCCL mining has reached to the wall of CFRI (*Prabhat Khabar 14.06.05*)

EVENTS AHEAD

1. Independence day on 15 August 2005
2. Hindi Pakhwara from 1–14 September 2005
3. CSIR Foundation Day on 26 September 2005

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