



आरोग्य खनिक

AAROGYA KHANIK

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IMPORTANT EVENTS

- Hindi Diwas
- Independence Day 2010 celebrated at NIMH.

निदेशक का संदेश

राष्ट्रीय खनिक स्वास्थ्य संस्थान से प्रकाशित होने वाली तिमाही समाचार पत्रिका "आरोग्य खनिक" के द्वितीय संस्करण में आप सभी का स्वागत है। इस दशक में खनन उद्योग हर दृष्टी से उत्साहवर्धक रहा है। इसके साथ ही इस संस्थान की कीर्ति में राष्ट्रीय अंतर्राष्ट्रीय स्तर पर विशेष पहचान स्थापित हुई है। संस्थान द्वारा आयोजित अंतर्राष्ट्रीय कार्यशाला को खनन उद्योगों से अच्छा प्रतिसाद प्राप्त हुआ है। संस्थान द्वारा प्रस्तावित पर्यावरण एवं स्वास्थ्य परियोजनाओं को खनन उद्योगों द्वारा सकारात्मक रूप से स्वीकार किया जा रहा है। निदेशक के रूप में मेरे कार्यकाल के द्वितीय वर्ष में खनन उद्योगों में कार्यरत खनिकों के स्वास्थ्य एवं संबंधित पर्यावरण का विशेष रूप से ध्यान रखा जा रहा है। इस वर्ष में संस्थान के मुद्रा उपाजन के लक्ष्य में भी वृद्धि देखी गयी है। खनन उद्योगों को प्रदान की जाने वाली सेवाएं गुणवत्ता से परिपूर्ण होने के कारण आने वाली सभी चुनौतियों को सफलता पूर्वक स्वीकार करने की क्षमता बढ़ी है। मुझे इस बात का गौरव है कि मेरे अग्रणी नेतृत्व में संस्थान को विकास के नये आयाम देखने को मिल रहे हैं। अंत में मैं आप सभी को विश्वास दिलाता हूँ कि खनन उद्योगों के पर्यावरण एवं खनिकों के स्वास्थ्य की रक्षा के लिए यह संस्थान भविष्य में भी संपूर्ण प्रयास करता रहेगा तथा विकास के नये आयामों को छूने का प्रयास करेगा।



डॉ. पी. के. सिशोदिया

हिंदी दिवस



दिनांक 6 अक्टूबर 2010 को कार्यालय में हिंदी दिवस का आयोजन किया गया। कार्यक्रम का औपचारिक उद्घाटन कार्यालय के निदेशक डॉ. प्रहलाद कुमार सिशोदिया ने अपने भाषण से किया। कार्यक्रम के मुख्य अतिथि डॉ. राजेश पशीनें, प्राध्यापक, हिंदी विभाग धरमपेट विज्ञान महाविद्यालय, नागपुर ने हिंदी के प्रयोग पर मार्गदर्शन किया। प्रतियोगिता परीक्षक के रूप में श्रीमती सुचिता राय, वरिष्ठ वैज्ञानिक, जवाहरलाल नेहरू अल्यूमिनियम शोध विकास एवं अभिकल्प केंद्र, ने योगदान दिया। हिंदी दिवस पर लगभग सभी कर्मचारियों एवं अधिकारियों ने आयोजित की गयी प्रतियोगिताओं ('हिंदी कविता पाठ' एवं 'हिंदी पत्र लेखन') में सक्रिय रूप से भाग लिया। इस अवसर पर कार्यालय के निदेशक एवं अतिथियों द्वारा कार्यालय प्रांगण में वृक्षारोपण भी किया गया। कार्यालय से प्रकाशित पत्रिका "आरोग्य खनिक" का औपचारिक विमोचन भी मुख्य अतिथि के कर कमलो द्वारा किया गया। कार्यक्रम का समापन निदेशक महोदय द्वारा पुरस्कार वितरण के साथ किया।

स्वतंत्रता दिवस 15 अगस्त 2010 को मनाया गया।

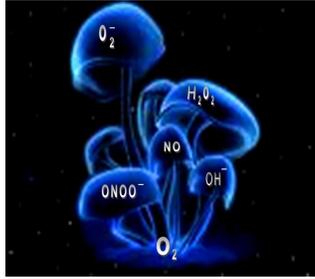


संस्थान में 15 अगस्त 2010 को 64 वें स्वतंत्रता दिवस सभी अधिकारियों एवं कर्मचारियों द्वारा अत्यंत हर्ष के साथ मनाया गया। निदेशक, डॉ. पी. के. सिशोदिया द्वारा सम्पूर्ण सम्मान के साथ तिरंगा फहराया गया। जिसके पश्चात सभी अधिकारियों एवं कर्मचारियों द्वारा सम्पूर्ण गरिमा के साथ राष्ट्रगान गाया गया। निदेशक महोदय ने अपने भाषण में सभी अधिकारियों एवं कर्मचारियों से कहा कि केवल कड़ी मेहनत ही सफलता का एक मात्र रास्ता है जिसके द्वारा ही खनिकों के स्वास्थ्य एवं संस्थान के उज्वल भविष्य को साकार किया जा सकता है। इस कार्यक्रम में जवाहरलाल नेहरू अल्यूमिनियम शोध विकास एवं अभिकल्प केंद्र के अधिकारी एवं कर्मचारी भी उपस्थित थे।

OUR VISION

“Safe Mines
and Healthy
Miners”

Antioxidant Status:



Miners are exposed to many hazardous chemical substances. The lung has a uniquely large epithelial surface area exposed to oxygen and external environment through direct exchange of gaseous material. The major organs which are affected by the mine environment are lungs. Therefore lungs are always vulnerable to be attacked by free radicals and reactive oxygen species (ROS). The ROS generated in the lungs are encountered and neutralized by a battery of proteins and non-protein molecules known as antioxidants. The first line of antioxidant defenses of the lungs comprise of the airways lining and interstitial fluids. The antioxidants are responsible in protecting the lungs from oxidant mediated lung injuries. The second line of lung defense is constituted by the epithelial lining cells throughout the respiratory tract and the presence of alveolar macrophages and other inflammatory cells within the lungs tissue form the third line of defense. Antioxidants being the major defense armamentarium of the lungs, any impairment in their status would therefore lead to several injurious and acute or chronic inflammatory lung conditions. Therefore antioxidant defense is one of the major defense mechanism adopted by the lungs throughout the evolution.

Atomic Absorption Spectrophotometer:



Atomic absorption spectrophotometer is available with the institute for the determination of trace elements in bio-environmental samples collected from mining and metalliferous industries.

This is a widely used instrumental technique for the trace element analysis. This is based on the fact that atomic state of every element absorbs characteristic wavelength of electromagnetic radiation (light) and this absorption of light is directly proportional to the concentration of analyte in the light path length and follows Beer-Lambert Law: The advantage of atomic absorption spectrophotometry over the other methods of analysis is that due to the use of hollow cathode discharge lamp it emits the characteristic wavelength of light and in turn absorbed by the analyte and this makes the method very selective. The sample goes through the steps i.e. **Nebulization** (solution broken into the particles), **Desolvation** (solvent volatilization), **Vaporization** (conversion of metal in gaseous form) and finally **Atomization** (braking of molecules in atoms). This all takes place in the flame burner head.

Vibration Exposure in Miners:



Introduction of heavy earth moving machineries e.g. high capacity dumpers, etc have increased the hazards of whole body vibrations among operators and helpers working on these machines. Similarly, use of large diameter drilling machines and hand held drilling machines such as jack hammer drills expose workers to the hazards of hand arm vibrations. Exposure to whole body vibration in operators of loaders, excavator, bulldozers, graders, etc. can adversely affect health of the workers. Vibration also tends to interfere and reduce performance in complex tasks including effect on vision. Vibration causes fatigue and effects functions of other body systems. Long term exposure to whole body vibrations is known to cause chronic backache and other degenerative spinal disorders.

The effects of hand arm vibrations are too well known and persons using hand held drilling machines are at high risk of developing Musculoskeletal Disorders involving joints of hand and arm. The hand arm vibrations are known to cause neurovascular disorders such as Raynaud's Phenomenon.

The surveys conducted by NIMH have shown that almost all HEMM have vibration levels higher than prescribed limits and persons employed on HEMM are at risk of developing health disorders.

Important Sponsored projects :

Manganese Ore India Limited (MOIL) :



MOIL Ltd. (formerly known as Manganese Ore India Limited) approached the Institute asking to carry out dust, noise, vibration and illumination studies in their underground and opencast mines. A team of three scientists including Assistant Director was deputed to visit the mines and develop a sampling strategy for workplace monitoring for a period of two years. On the basis of the assessment of sampling location a financial proposal has been submitted to MOIL recently. The Director, NIMH has personally made a visit to one of the deepest mines (Bharvelli Manganese Mines) near Balaghat, MP in this regard so that it is in accordance with the requirement of Regulation 124 of MMR, 1961. He further interacted with the doctors of Bharvelli Mine hospital for conducting health surveillance of employees of MOIL.

Essel Mining & Industries Limited (ESSEL) :

Shri B B Mandal, Assistant Director visited Jilling & Kasia Mines of ESSEL Mining & Industries Limited (EMIL) near Barbil in Keonjhar District of Orissa in connection with developing a sampling strategy for dust, noise & equipment vibration monitoring in their mines. A financial proposal along with an assessment of sampling location was submitted to EMIL. ESSEL Mining has awarded a work order worth ` 9.80 Lakhs for studies in Jilling Iron & Manganese Mines.

Steel Authority of India Limited (SAIL) :

Shri B. B. Mandal, Assistant Director visited Bolani Iron Ore Mines of Steel Authority of India Limited (SAIL) near Barbil in Keonjhar District of Orissa in connection with developing a sampling strategy for dust, noise & equipment vibration monitoring in their mines. A proposal with a model assessment of sampling location was submitted to SAIL. Once accepted, the assessment strategy suggested by NIMH will be followed in all other Mines of SAIL.

List of Mines Visited by NIMH and KGF Scientist:

1. MOIL visit : Gumgaon (U/G), Kandri (U/G), Mansar (U/G), Chikla (U/G), Dongri Buzurg (Opencast), Tirodo (Opencast), . Bharweli (U/G), Beldongri (U/G).
2. Ubbalagundi, Subrayanagudi and Thimmapangundi iron ore mines, Dist. Bellary.
3. Ilakal Red Granite quarry, Dist. Bagalkot .
4. Katigere Dolomite mines, Dist. Bagalkot .
5. Chikkashkere, Lokapur (West), Yedwad , Maddur Dist. Bagalkot and Awarpur limestone mines, Dist. Chanrdapur.
6. Bolani mine Barbil, Dist. Keonjhar.
7. Jilling– langalota, Kasia, Barbil, Dist. Keonjhar.

R & D projects

Ongoing S & T projects

Sr. No	Name of the Project	Sponsoring Agency	Remarks
1.	Development of protocol for evaluation of vibration hazard potential of mining equipment.	Ministry of Mines S& T Division, GOI	In Progress
2.	Systematic study of potential biomarkers of occupational diseases in miners	Ministry of Mines S& T Division, GOI	In Progress

Ongoing Clientele Projects

Sr. No	Name of the Projects	Participating Scientists	Month/Year
1.	Health surveillance of RSMML employees Phase I (Completed)	Dr. S. Dhatrik , Dr .S Nandi, U. Dhumne, S. Ingole, S. Narwadiya, R. Tumane and P. Soni	Oct 2010
2.	Health surveillance of RSMML employees Phase II (In progress)	Dr. S. Dhatrik , Dr .S Nandi, U. Dhumne, S. Ingole, S. Narwadiya, R. Tumane and P. Soni	Nov 2010

Appointment/ Promotion/ regularization during the year 2009-10

Sr No.	Name	Promoted to
1	Shri B. B. Mandal	Assistant Director (1 st Oct-09)
2	Shri G. S. Ravindra	Assistant Director (Absorbed)
3	Dr. S. V. Dhattrak	Sr. Research Officer (1 st Mar-10)
4	Shri Debasis. Chatterjee	Sr. Research Officer (1 st May-10)
5	Shri J. Jayakumar	Scientific Officer (Absorbed)
6	Shri Umesh Dhumne	Jr. Scientific Officer (1 st May-10)
7	Shri Sachin Narwadiya	Sr. Scientific Assistant (1 st Sept-10)
8	Shri K Ramachandran	Sr. UDC (1 st Jun-10)
9	Shri Milind Dixit	Sr. PA to Director (1 st Oct-10)

Our Distinguished visitors and their valuable comments

Date	Name of visitor	Affiliation with designation	Visitors Comments
06.08.2010	Dr. G. B. Shinde	Head, Department of Biochemistry, RTM Nagpur University, LIT, Nagpur	The institute is upcoming and may proved to be one of the best re-search centers in future.
24.09.2010	Dr. S. K. Wadhawan	Director (Technical) Ministry of Mines, Shastri Bhawan, New Delhi	Most Fascinating! State of art equipments and modern facilities to match with conductive work culture for optimum productivity and health of experts as well.
06.10.2010	डॉ. राजेश पशीने	प्राध्यापक, हिंदी विभाग, धरमपेठ विज्ञान महाविद्यालय, नागपुर	आपके विभाग में आकर आनंद की अनुभूति हुई। संस्थान के विषय में विस्तृत जानकारी पाकर ज्ञानार्जन हुआ। अस्तु, धन्यवाद।
06.10.2010	श्रीमती सुचिता राय	वरिष्ठ वैज्ञानिक, जवाहरलाल नेहरू अल्यूमिनियम शोध विकास एवं अभिकल्प केंद्र	हिंदी दिवस का आयोजन बहुत अच्छी तरीके से किया गया। बहुत-बहुत

Publications:

1. B. B. Mandal, A. K. Srivastava; Musculoskeletal disorders in dumper operators exposed to whole body vibration at Indian Mines; International Journal of Mining, Reclamation and Environment, Vol. 24, No. 3, September 2010, 233-243.
2. Rajani G. Tumane, Shubhangi K. Pingle, Aruna A. Jawade, Nirmalendu N. Nath; An Overview of caspase: Apoptotic protein for silicosis; Indian Journal of Occupational and Environmental Medicine; August 2010, Volume 14, Issue 2, 29-36.

Forthcoming Events:

1. 14th World Conference on Lung Cancer Amsterdam, Netherlands 3 – 7 July 2011.
2. Biomarker World Congress, Philadelphia, State Pennsylvania 2 - 4 May 2011.

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Occupational
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