**SCHOOL ON MINERAL BIOTECHNOLOGY**

December 14-18, 2009

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**REGISTRATION FORM**

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<tr>
<th>Degree</th>
<th>Year</th>
<th>University</th>
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Experience (Years): ........................................

Research Interests: ........................................

Sponsored by: ........................................

Name: ........................................

Designation: ........................................

Organization: ........................................

Signature of Applicant ........................................

Recommended ........................................

Signature (Head of the Institution, with Seal) (*)Research students registered for a degree should produce bonafide certificate as proof from the Institution)

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**TARGET GROUP**

The school encourages participation of faculty from academic institutions, young scientists from various research institutions and research students at their early stages of research in Environmental Biotechnology. Participants from departments or working in area of Metallurgy, Materials Engineering, Chemical Engineering, Biological Sciences, Chemistry and Earth Sciences will be encouraged.

**IMPORTANT DATES**

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<tr>
<th>Event</th>
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<tr>
<td>Last date for receiving applications</td>
<td>September 15, 2009</td>
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<tr>
<td>Intimation of selected participants</td>
<td>October 01, 2009</td>
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**COURSE COORDINATORS**

( Please send your duly forwarded applications to any of the following :)

**Prof. K. A. Natarajan (Coordinator)**
Department of Materials Engineering, Indian Institute Science, Bangalore – 560 012.
Ph: 080-22932679 / 23600120 (Off), 080- 23600472 (Fax)
080-23646499 (Home), 09880250091 (Mob)
E-mail: kan@materials.iisc.ernet.in

**Prof. S. Subramanian (Co-coordinator)**
Department of Materials Engineering, Indian Institute of Science, Bangalore – 560 012.
Phone: 080-22932261, Fax: 080-23600472
E-mail: ssmani@materials.iisc.ernet.in

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**Only twenty participants from academic/research institutions will be selected.** Participants will be selected on an all-India basis. Selected candidates will be paid towards travel, boarding and lodging as per government rules. The registration form (photocopies can be used), duly forwarded by the head of the institution, should reach on or before **September 15, 2009.**
INTRODUCTION

Mineral biotechnology deals with use of mining microorganisms in several metal extraction and environmental control processes. There are two major areas in which biological systems are currently utilized by the mining industry: metal extraction (Biomining) and treatment of acid mine drainage (Bioremediation). Biomining is currently used successfully for the commercial-scale recovery of metals such as copper, gold, uranium and cobalt and many other applications have been piloted. Mineral biotechnology thus has the potential for a major technology breakthrough for the metals and minerals industry.

OBJECTIVES

The primary objective is “to build awareness and competence in the country in the area of mineral biotechnology”.

The School is focused on two aspects:
(i) Bioleaching (ii) Bioremediation

COURSE CONTENT

Following topics will be covered under different sessions:
- Microbiology and molecular biology of mining microorganisms
- Bioleaching: Principles and mechanisms
- Bioleaching of copper, uranium, gold and other base metals
- Status and future trends in bioleaching
- Relevance and applications of biohydrometallurgy in India
- Modelling aspects
- Biogenesis and Biominalization
- Biological sulfate reduction in mining environments
- Bioremediation: Microbial processes in acid mine drainage, metal dissolution and speciation
- Possible uses of bioremediation for contaminated sites
- Bioremediation for effluent treatments (eg: As, Cr, cyanide)

The school includes both theory lectures and laboratory training in the above areas.

FACULTY

Prof. K.A. Natarajan (IISc, Dept. of Materials Engineering)
Prof. S. Subramanian (IISc, Dept. of Materials Engineering)
Prof. A.M. Raichur (IISc, Dept. of Materials Engineering)
Mr. R.J. Deshpande (IISc, Dept. of Materials Engineering)
Prof. C. Durga Rao (IISc, Dept. of Microbiology & Cell Biology)
Prof. J.M. Modak (IISc, Dept. of Chemical Engineering)
Prof. Amitava Mukherjee (VIT, Vellore)
Dr. M.N. Chandraprabha (MSRIT, Bangalore)
Dr. N. Ahalya (MSRIT, Bangalore)
Prof. S.R. Dave (Gujarat University, Ahmedabad)

ACCOMMODATION

Accommodation for the duration of the course will be arranged inside the IISc campus. Since accommodation in IISc is limited, family members of the participants cannot be allowed.