Enabling Research & Development at IIT Bombay

Presentation at MHRD-UGC Brainstorming workshop 1st March, 2012
IIT Bombay Publications
(Scopus indexed Journals + Conference Papers)

Published Year
Source: Scopus + WoS + MathSciNet data
Indian Patent Applications (1.1.97 to 31.12.11) : 241

Foreign patent applications : 64
(US, Europe, Japan, Canada, Taiwan, Brazil, Gulf)

PCT applications : 56

Patents granted (Indian+ Foreign) : 69+3
Administrative Enablers

- Decentralisation of Decision making
- Empowerment of functionaries - Deans, Heads, Principal Investigators
- Budget allocations, financial autonomy – spending within limits
Enabling Research

• Online Processes – Quick response
• Recruitment, Project accounts, IP management
• Central Facilities – maintenance fund, online registration, support for staff – user workshops
• Research Infrastructure Fund
• Online Purchase System
• Catalysing inter-disciplinary research
Research Centres / Consortia: Examples

- Centre for Excellence in Nanoelectronics
- PowerAnser Laboratory
- VLSI Research Consortium
- ISRO – IITB Research Cell
- National Mission on Education through Information and Technology
- Centre for Excellence in Telecom (IITB – Tata Teleservices)
- Geospatial Information Science and Engineering Lab
- National Solar Thermal Research, Testing and Simulation Facility
Research Centres / Consortia (Contd.)

- National Centre for Photovoltaic Research and Education (NCPRE)
- National Centre for Aerospace Innovation and Research (NCAIR)
- IGCAR – IITB Research Cell
- Climate Change Research Centre
- Healthcare Consortium
- Proposed Centre of Excellence for Homeland Security
- Water Research Initiative
- Rural Development
- Centre for Urban Studies
- Combustion
Research that makes a difference

- difference to Indian society and lifestyles
- difference in solving country’s problems
- difference by training ‘quality manpower’-learning by doing
- difference by extending basic understanding, knowledge, techniques
- difference by providing improved products, technology, know how
- difference by providing leadership of thought and ideas in science and technology areas
Funding/ Seeding Research

• Seed Grant – new faculty – Rs 7 lakhs/ Rs 20 lakhs
• Research Development Fund – 15% of overheads
• Department Development fund – 15% of overheads
• Bridge grant, Matching Grant
• Funding for Student conference travel
• Grant for Societal projects
Consulting/ Licensing/ Incubation

- Streamlined mechanism for consulting
- 70% to faculty, 30% to Institute
- IP protection – cost – Institute, national, PCT, US
- Online Invention Disclosure form
- Panel of patent attorneys,
- Licensing website, advertisement, brochure
- Incubation through SINE
IIT Bombay Technologies for Licensing

IIT Bombay offers intellectual property available as patents / patent applications / Knowhow, based on its research and development efforts to licensing to interested parties in various areas.

We invite you to look at the details of the Patents / Technologies available for Licensing categorised area wise (please see on the left side) available for licensing.

Enquiries may be made by registering your details for Patents / Technologies available for Licensing and checking the specific technologies in the list given.

Request for more information may be sent to licensing@iitb.ac.in.

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Manpower

• Recruitment – 89 day/ 1 year – flexible and quick
• Remuneration- suggested norms and levels, flexibility to pay higher amounts based on fund situation, capability
• Partial support for administrative staff to help faculty
Technical section

• Managing IP, agreements, MOUs, Licensing, Technology transfer
• Spearheading new initiatives
• Publicity, Dissemination
• Industry Liaison
# Interaction with Indian Industries

<table>
<thead>
<tr>
<th>Indian Industries</th>
<th>Modes of interactions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R&amp;D projects</td>
</tr>
<tr>
<td></td>
<td>Labs / Endowments</td>
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<tr>
<td></td>
<td>Student sponsorship</td>
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<tr>
<td></td>
<td>Consortia</td>
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<td>BG Exploration and Production India</td>
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<td>Crompton Greaves</td>
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<td>Reliance Industries Limited</td>
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<td>Tata Consultancy Services</td>
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<td>Unilever Industries</td>
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<td>International Industries</td>
<td>Modes of interactions</td>
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<td>R&amp;D projects</td>
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<td>Applied Materials</td>
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<td>Boeing</td>
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<td>Yahoo</td>
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Incentives for research - Awards

• Mathur excellence awards – 10 years – basic/applied science – Internal + External committee (Rs 1.5 lakhs)
• IRCC Awards – Research papers, review papers, industrial impact, young researcher award – Internal committee (Rs 20,000 + Rs 5 lakhs research grant)
• Patwardhan Technology Development Award
• Award lectures
• Chair Professorships – Rs 20,000 per month top up + Rs 50,000 per year contingency
Dr. P.K. Patwardhan Award

Development and transfer of Super Critical Fluid Extraction Technology (2001)
M. Mukhopadhyay, Sandip Roy, S. L. Narayanamurthy, Dr. S. Baser, all Chemical Engineering Department

Development and Transfer of Soil Biotechnology (2002)
H. S. Shankar, Chemical Engineering Department
Dr. P.K. Patwardhan Award


Matrix Heat Recovery Units (2005)
M.V. Rane, Mech. Eng.
Dr. P.K. Patwardhan Award

Mumbai Navigator - travel planning program for Mumbai (2006)
Computer Science & Engineering Department

Hindi Wordnet and the Associated Software (2008)
Pushpak Bhattacharyya & his team, Computer Science and Engineering Department
Dr. P.K. Patwardhan Award

Cryocooler Technology Development (2009)
Milind D. Atrey, Department of Mechanical Engineering

High quality low cost tumour knee prosthesis (2010)
B. Ravi and his OrthoCAD team, Mechanical Engineering
Student Innovation/ Research

- Enthuse – attracting students to research
- Funding student technology development, research initiatives
- Pratham, Biosynth, Baja,…
- Student grand challenge – Powai lake
- E-cell
- Techconnect in Techfest- showcasing IITB research
Student initiatives at IIT Bombay

Shwas – Underwater gliders

Matsya – Autonomous Underwater Vehicle (Robosub)

Biosynth

IITB Racing

Param – Student Satellite

IITB Robotics
Reaching Technology to the User

From Concept to Utilization

Natural Linkages exist when margins and volume are high

Society for Innovation and Entrepreneurship
SINE: Facilities & Services

- Physical infrastructure
- Shared Resources
- Business Network Support
- Events & company specific training programmes and workshops
- Seed Fund support on case to case basis
- 44 companies incubated
- Network: mentors, experts, professional services