Engineering systems focus: gives emphasis to complex systems that not only have critical technological components, but also have significant economical and socio-technical level interactions, going beyond traditionally defined engineering disciplines.

The following specific fields were identified as the initial focus areas, on top of which an integrative anchor program will be developed:

– Engineering Design and Advanced Manufacturing
– Transportation Systems
– Sustainable Energy Systems
– Bio-Engineering Systems

MIT-Portugal Program
Sustainable Energy Systems PhD program

• PhD:
  • Typically 4 years
  • 1 year of classes in either modular-intensive or traditional term-length format
  • International program: all materials, lectures and activities in English
  • Students are welcome to spend up to 12 months research at MIT and have MIT co-advisor
Research Fields and opportunities

SUSTAINABLE ENERGY & TRANSPORTATION SYSTEMS
- Renewable energies
- Smart Grids, microgrids and V2G
- High Speed Rail
- Sustainable Mobility

ENERGY & MOBILITY SYSTEMS
- Urban Metabolism
- Sustainable, Smart and efficient energy systems
- Intelligent Transport Systems

SYSTEMS & COMPONENTS FOR ELECTRIC VEHICLES
- In-vehicle power systems
- Lightweight materials and structures
- Manufacturing concepts
- Sustainability issues

MATERIALS & DESIGN INSPIRED PRODUCTS

ENGINEERING REGENERATIVE MEDICINE
- Stem Cells
- Tissue Engineering
- Regenerative Medicine

MEDICAL DEVICES
- Micromanufacturing in medical devices
- Smart medical devices
- Operations management in medical device manufacturing
- Hybrid human-machine systems

GREEN ISLANDS PROJECT

STEM CELL ENGINEERING FOR REGENERATIVE MEDICINE
- Stem Cells
- Tissue Engineering
- Regenerative Medicine
Energy Research - Challenges

Present
Alternatives

Future

Do "nothing" status quo

Reduce demand
– Improve efficiency
– Demand Side Management
– Pricing mechanisms

Renewable Energy Technologies
– wind, sea, solar, biomass, geothermal...

Sustainable ENERGY and MOBILITY Systems
– Intelligent networks, Renewables
– New vehicle energy paradigms
– Better integration, the individual as an actor of the energy system
MPP in numbers
(2006-2014)

- **525** Current PhD Students
- **111** PhD Graduates
- **858** Total # Students
- **270** Portuguese Faculty
- **70** MIT Faculty
- **37%** Percentage International Students
- **190** MSc Graduates
- **44** Students Countries of Origin
- **28** Portuguese Higher Education institutions involved in R&D Activities
- **59** Industry Affiliates
- **55** Active co’s; 300+ jobs; €20M+ in financing
- **5** 5 BGI Editions 1,498 entrepreneurs 22 countries 4 continents
- **8** Portuguese institutions offering PhD in association
- **525** Total PhD Graduates
Inter-university collaboration within the MPP four focus areas has increased considerably over the course of MPP Phase 1 (Network Analysis of co-publication patterns 2001-06 vs 2007-12).
MPP has received, to date, 2711 PhD candidates applications with an average acceptance rate of 23.3%.
The MPP PhD programs have raised interested not only within the Portuguese Academic universe, with the number of international applicants averaging 50.9%,

![Graph showing Portuguese and international applications to PhD Programs (2007 – 2014)]
Education activities

- 636 PhD candidates have registered at the Portuguese Universities
- 111 MPP PhD Graduates
The Academic Pathway
Towards the integration of the Doctoral programs’ curricula

Innovation for Technological Systems
- Introduction to Innovation and Entrepreneurship
- Innovation in Bioengineering

iTeams for Innovation
- IdeaSpring
- MidTerm presentation
- Final Presentation

E3 Forum – Education, Employment and Entrepreneurship e3forum.org/
MIT $100K Entrepreneurship Competition www.mit100k.org/
IdeaStream Symposium (MIT Deshpande Center) deshpande.mit.edu/news/ideastream/2013
Building Global Innovators (Portugal) http://mitportugal-iei.org/
Outreach and Program Highlights
Raise public awareness of MPP and its impact in society


- MPP Press Releases* (13)
- News stories - direct contact with journalists, media inquiries, and/or in collaboration with other Communication offices (20)
- News article at the website (66)
- Events announcements at the website (73)
- MPP’s database : over 7,000 contacts - arranged in 60 tailored groups
- MPP bi- monthly newsletters (12)
- Social network platforms: Facebook, Twitter, LinkedIn and Google+.

* MPP Press releases are also shared with the communication office of the Key stakeholders (FCT & MIT).

<table>
<thead>
<tr>
<th>MPP’s Website <a href="http://www.mitportugal.org">www.mitportugal.org</a></th>
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<tr>
<td><strong>Page views</strong></td>
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<tr>
<td><strong>Age</strong></td>
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| **Gender** | Male 46%  
Female 54% |
| **Nationality** | Portugal 53.02%  
United States 9.46% |

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<tr>
<td>Linked IN</td>
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</tr>
</tbody>
</table>
New mechanisms to foster integrated research and industry engagement
MISTI Program launched to stimulate MIT internships in Portugal

MISTI has officially incorporated a program in Portugal as of August 2014.

- 6-10 MIT students to Portuguese companies, research institutes and university labs;
- $36,000 for MISTI student internships in Portugal (no more than $6,000 per internship)
- Promotional events at MIT for internship opportunities in Portugal;
- Applicants via application form and interview;
- Match interests (host institution & student)
Outreach and Program Highlights
High profile network and Outreach activities

Entrepreneurs, Academics, Students, Companies, Hospitals, Municipalities, ...the society

Partners to empower and outreach!