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# Energy Research and technology transfer at the Department of Energetics

**Bruno Panella**  
Department of Energetics  
Politecnico di Torino



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**Bruno Panella** graduated in Nuclear Engineering in 1966 at Politecnico di Torino, where since then he worked as assistant professor until 1970, professor of heat transfer until 1980 and full professor of nuclear power plant thermal hydraulics up to now. He was Director of the post graduate course in Energy Engineering from 1984 to 2004, President of the Nuclear Engineering courses Board from 1987 to 1991, Director of the Energy Department from 1991 to 1995, Head of the PhD in Energy Engineering from 1999 on, Director of the Politecnico di Torino Quality assurance Centre from 1996 on, vice-Director of the Energy Department from 2003 on. He is member of the Scientific Council of the International Centre for Heat and Mass Transfer (ICHMT), member of American Nuclear Society (ANS), member of the executive board of the Italian Heat Transfer Association (UIT), vice-President of the scientific board of the national Interuniversity Consortium for Technological Nuclear Research (CIRTEN). He represents Italy in the Board of Governors of the European Nuclear Education Network (ENEN) Association. He has been the Work package leader in three FP V and FP V European Programmes on the Nuclear education in Europe.

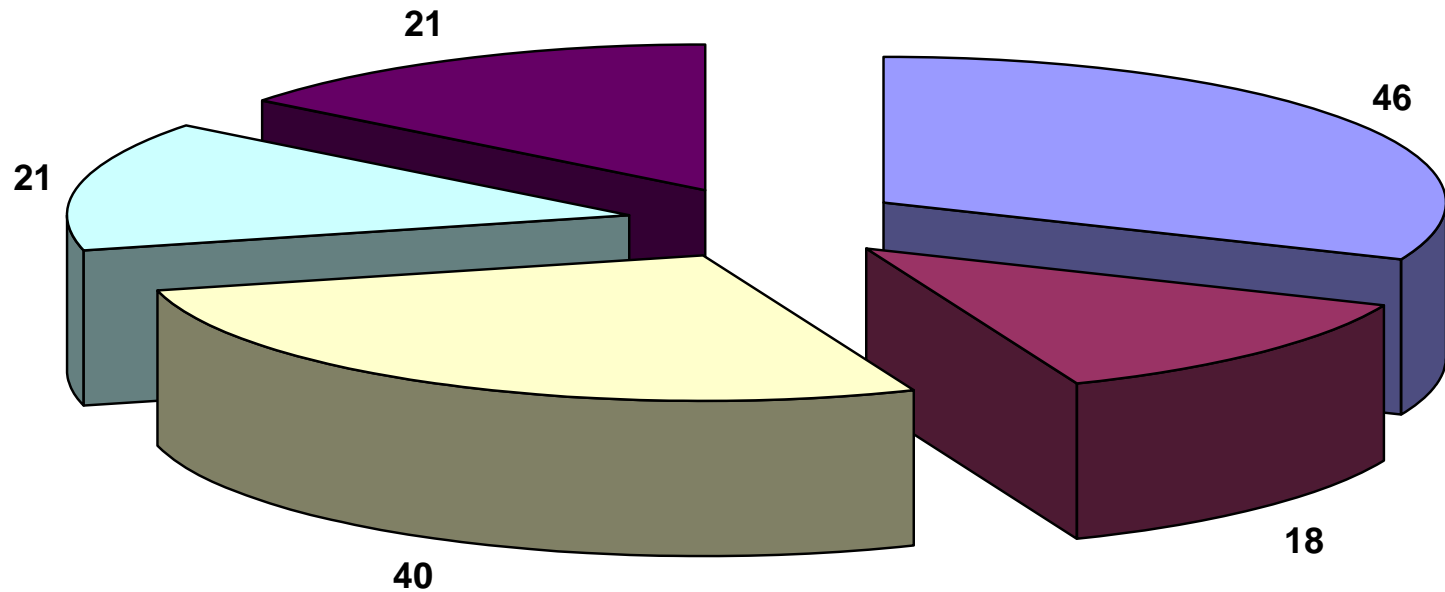
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# Politecnico di Torino Department of Energetics

Prof. Bruno Panella  
Vice-Director of the Department



# Department staff



■ professors ■ research assistants ■ PhD students ■ collaborators ■ technicians and administration



# Research activities

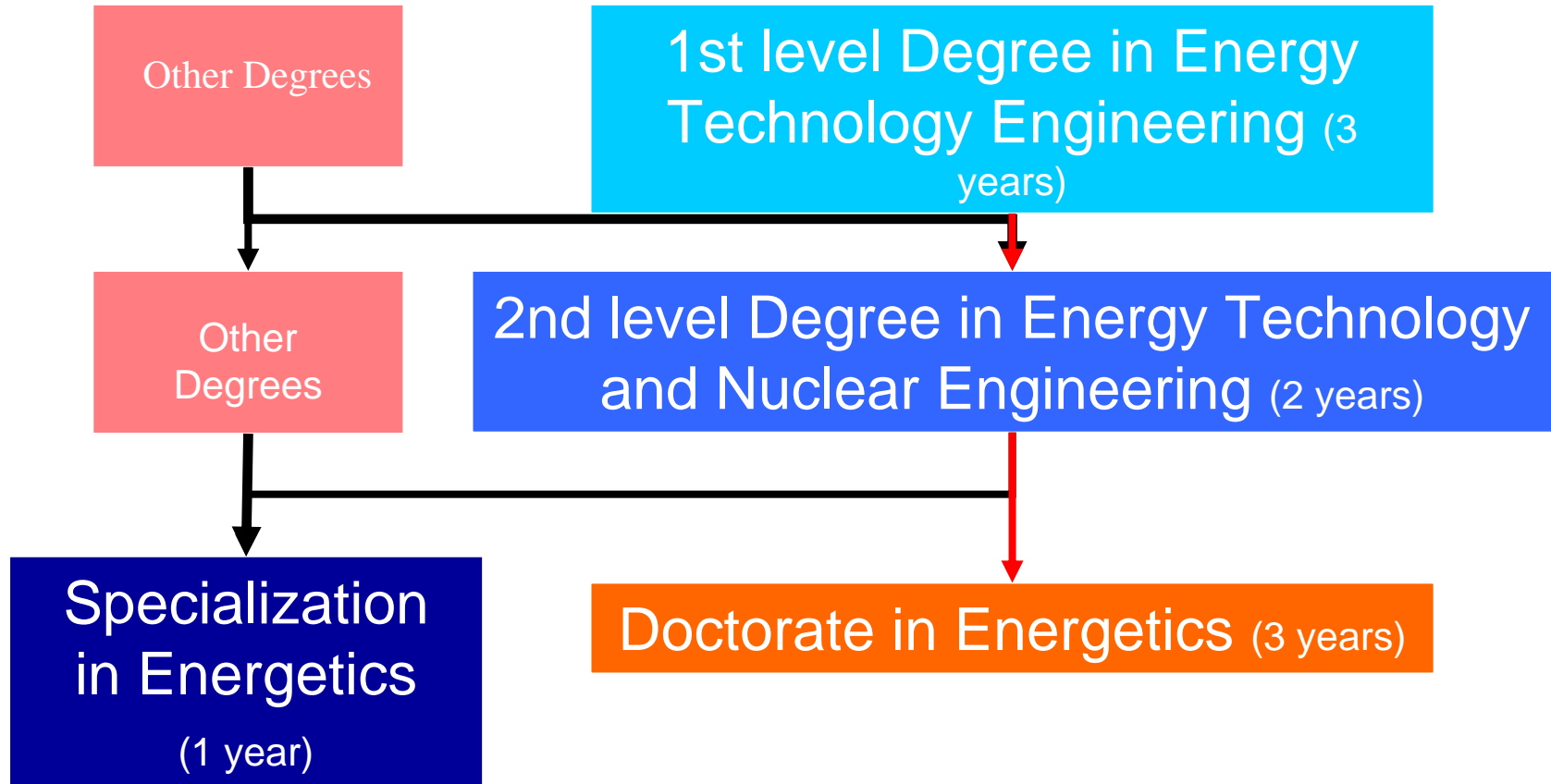
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- Over 70 ongoing research contracts, about 50 started in year 2006 (some partners: Alenia, CRFIAT, Fiat AUTO, CEA, CESI, CVA, General Motors, GTT, IRIDE Energia, TRM, Siemens Turbocare, Westinghouse...)
  - 20 International (UE, Euratom, IEA, ITER) and National (MIUR-PRIN) ongoing projects
  - 176 scientific papers published in 2006
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# Education in Energy Technology





# Teaching

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- 261 courses
- 12000 students
- 350 applications for undergraduate Energetics programme (145 enrollment)
- 40 applications to the Doctorate





# Research areas

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- Industrial and Environmental Technical Physics
- Nuclear Power Plants and Physics of Nuclear Reactors
- Fluid flow Machines and Aerospace Propulsion



- HVAC in buildings
- Acoustics and lighting
- Combustion
- Thermoeconomy
- Thermophysical properties
- Refrigeration





- Safety & Reliability of plants
- Nuclear fission
- Nuclear fusion
- Energy planning and modelling

- Internal combustion engines
- Combined heat & power production
- Aerospace propulsion
- Fluid Power





- New energy vectors (hydrogen) →
- Environmental impact of energy systems
- Renewable energy sources



# Department Facilities

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- 16 Experimental Laboratories (4200 m<sup>2</sup>)
- 7 Computer Laboratories (500 m<sup>2</sup>)
- Library
  - 6.600 volumes
  - More than 100 subscriptions to International Journals