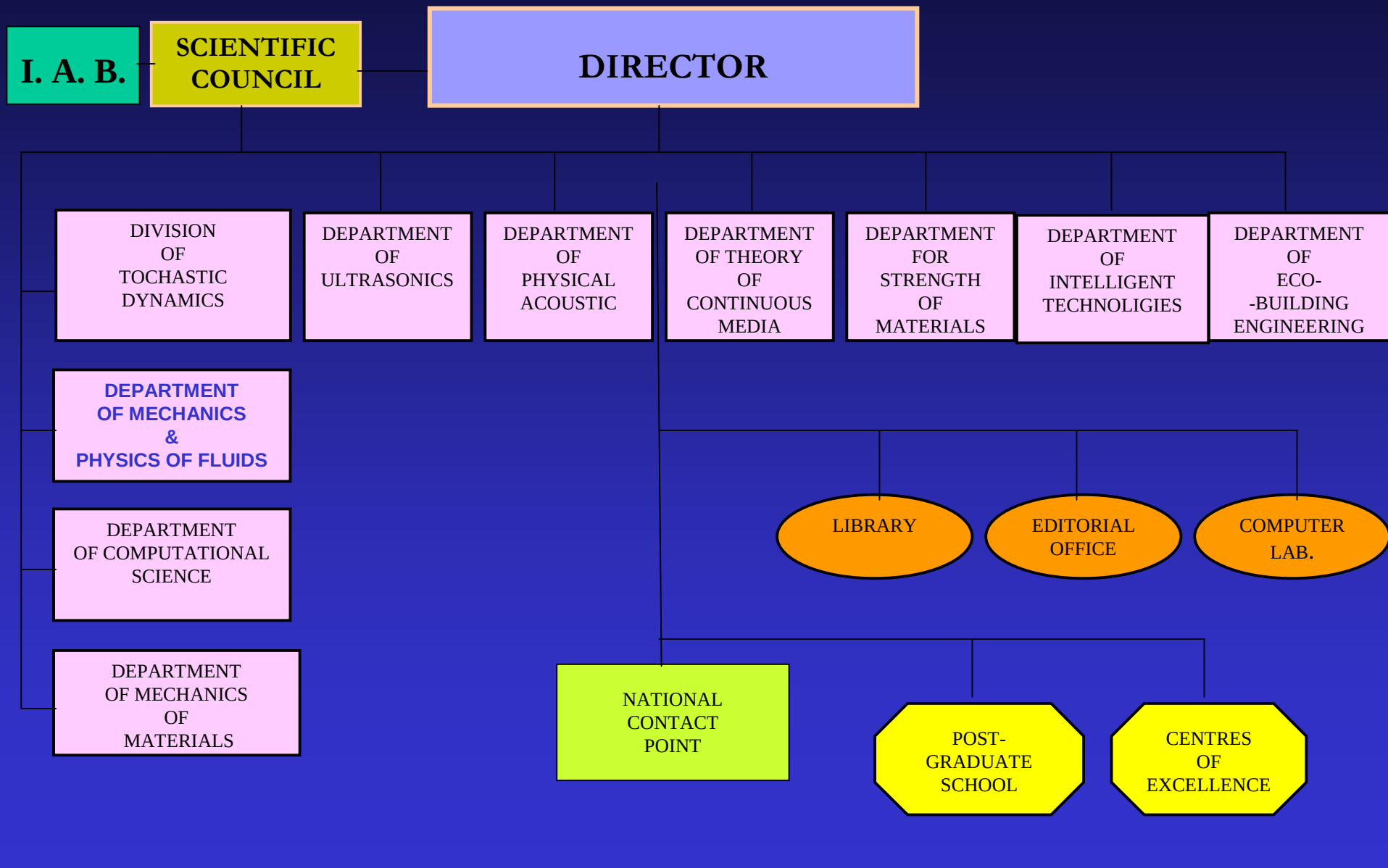
FEDALOC

First meeting 3.09.2007

IPPT PAN, Warsaw

Institute of Fundamental Technological Research - Polish Academy of Sciences

Staff: 269 researchers (56 full and assoc. professors)



DEPARTMENT MECHANICS AND PHYSICS OF FLUIDS

Head
Prof. Tomasz Kowalewski

The Department has 2 Sections:

- **Modelling in Medicine and Biology**
- **Viscous and Thermal Flows**

Staff: 15 persons + 7 PhD students

professors:	**2**
associate professors:	**3**
senior researchers:	**7**
research assistant:	**2**
technician:	**1**

DEPARTMENT OF MECHANICS AND PHYSICS OF FLUIDS

Research Projects

- Microflows experiment and simulation: molecular dynamics, dissipative particles
- Free surface flow: droplets, emulsions, liquid jets, vapour bubbles
- Electrospinning of nano-fibres – experiment and modelling
- Dynamics of peptide and DNA chains, stochasticity in gene expression
- Natural convection, flow with phase change, solidification
- Dispersed media, Stokes flow, hydrodynamic interactions in suspensions
- Experimental and computational modelling of convective flow in the atmosphere
- Hydrodynamic interactions in atmospheric clouds
- Flow of granular media
- Particle Image Velocimetry and Thermometry, validation of CFD codes
- Mathematical description of superfluidity
- Hall thruster model, physics of plasma

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Flow Efficient DNA Analyser

Cooperation Project (STREP)

- Miniaturize DNA analysis tool to obtain integrated and standardized analysis system
- Study of electrophoresis, DNA-gel interaction.
- Improve time efficiency of the DNA analysis on the chip
- Concentration control in the process of DNA analysis
- Heat control in the process of DNA analysis
- Integrated micro-electro-opto-mechanical system to analyse DNA samples

FP7

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- ✓ **Small and medium-scale focused research projects (STREP) to generate new knowledge, including new technology, or common resources for research in order to improve European competitiveness, or to address major societal needs.**
- ✓ **Clearly defined scientific and technological objectives directed at obtaining specific results, which could be applicable in terms of development or improvement of products, processes, services or policy**
- ✓ **STREPs target a specific research objective in a sharply focused approach.**
- ✓ **They have a fixed overall work plan where the principal deliverables are not expected to change during the lifetime of the project.**
- ✓ **6 to 15 participants, EC contribution between 1 and 4 M€**

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- Information and Communication Technologies
- Call identifier: FP7-ICT-2007-2
- Closure date: 9 October, 2007, at 17:00
- Indicative budget: 477 M€
- Topic: 3.3 Components, systems, engineering
- Objective: ICT-2007.3.6 Micro/nanosystems

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Objective ICT-2007.3.6: Micro/nanosystems

- **Converging micro/nano, bio and information technologies**
- **Innovative bioMEMS, biosensors, lab-on-chip microsystems and autonomous implants and bio-robots.**

Budget: 32 M€ to STREP