

INSIS - Institute of engineering sciences and systems
INP - Institute of Physics

SP2MI – Téléport 2
 11, Bd Marie et Pierre CURIE - BP 30179
 86962 FUTUROSCOPE Cedex
 Tél. : (33) 5 49 49 74 18
 Fax : (33) 5 49 49 74 15

Site > <http://www.pprime.fr>

Director: Yves GERVAIS
 direction@cnrs.pprime.fr
 Deputy Director: Jacques BOREE

PPRIME

Research Institute of Poitiers - UPR3346

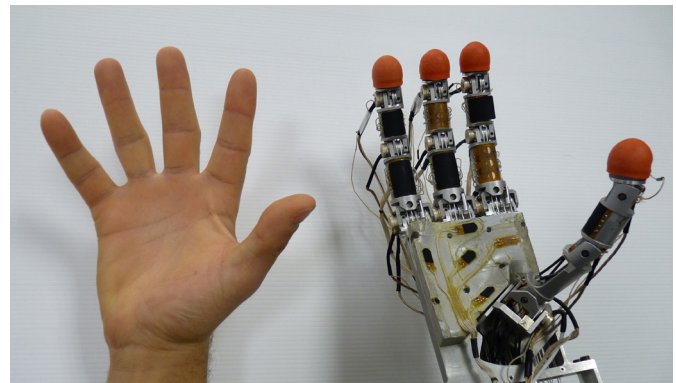
MECHANICAL ENGINEERING AND COMPLEX SYSTEMS

The MECS Department is structured around three research groups in Mechanical Engineering (PEM, RoBioSS and Tribo-Lub) where a culture of coupling between experimentation and modeling is predominant. This approach stimulates the transversality between the three topics and promotes consistency in research activities.

The works of the PEM (Photomechanics and Experimental Mechanics) group focus on the development of non-intrusive and contactless measurement methods in mechanics as well as the use of experimental data collected to conduct a thorough analysis of the mechanical response of solids.

The activities of the RoBioSS group (Robotics, Biomechanics, Sport, Health) focus on the coordination of multibody systems by merging concepts from robotics and the biomechanics of human motion.

Research of the TriboLub group covers the whole issue of lubrication and mechanical aspects of contact, wear and friction encountered in various machine elements.



Artificial hand with 16 degrees of freedom © PPRIME

Staff

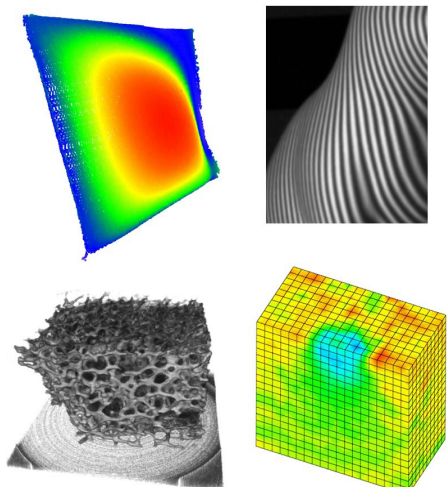
- 3 CNRS researchers
- 30 teacher-researchers
- 20 PhD students
- 11 engineering, technical and administrative permanent staff



Keywords

Lubrication (journal bearings, thrust bearings, seals, mechanical seals); sealing; dry friction and wear; multiphysics coupling (thermal, elastic, cryogenic fluids, shock); turbulence; two-phase flow; phase change; Robotics; biomechanics, sports, health; dynamic of polyarticulated systems (humans, humanoids, mechanical hands); synthesis, optimization and motion planning; synthesis for 2D and 3D mechanism; Mechanical design; mechatronics; photomechanics; optical measurements: 2D, 3D, motion, deformation, stress, transients phenomena; experimental analysis in solid mechanics; cracking; identification; thermomechanics; complex structure, heterogeneous material.

Experimental analysis of complex structures by measuring surface and volume mechanical data © PPRIME



Research training



Master's degree in Engineering Sciences:

- «Mechanical Engineering»,
- «Biomechanical Engineering»,
- «Automated Systems and Advanced Robotics»

Master in Science and Technology of Sports and Physical Activities:

- Master «Disability Reduction and Motive Performance Engineering».

INDUSTRIAL COLLABORATIONS: CNES, Groupe SAFRAN, ALSTOM, EDF, CETIM (Laboratoire commun LERDED), LIEBHERR, CARBONE LORRAINE, TOTAL, RENAULT, TEUCHOS, MECACHROME, GERFLOR, HERMES, BIOMETRICS FRANCE, ROBOSOFT, FATRONIK France, AXS ingénierie.

INTERNATIONAL COLLABORATIONS: Universités de Montréal et NRC Canada (Ca), Sydney (Au), Sousse et Enim (Tr), Loughborough (UK), Cassino (It), Polytechnica (Ro), Agadir et Hassan II Casablanca (Maroc), Lulea (Suède), Minho (Portugal), Gdansk (Pol), Lome (Togo), Comores, Chlef, Khemis-Miliana, Mentouri, Oran, Sidi bel abbes, Tizi-Ouzou (Alg.), Oslo (No), Hongkong, Aachen (D), Moscou (Ru).

CNRS Regional Office Centre Limousin Poitou-Charentes