AMADEus

Advanced MAterials by DEsign

Pr. ETIENNE DUGUET
Born in 1965; Professor of chemistry and researcher at CNRS; Coordinator of several research projects.
77 publications, 8 patents.

Materials are key components for the products manufactured by almost all industrial sectors. In fact, many 21st century innovations will depend on the development of new materials, with increasingly stringent demands on their intrinsic properties, costs, processing conditions, and on their impacts on human health and on the environment.

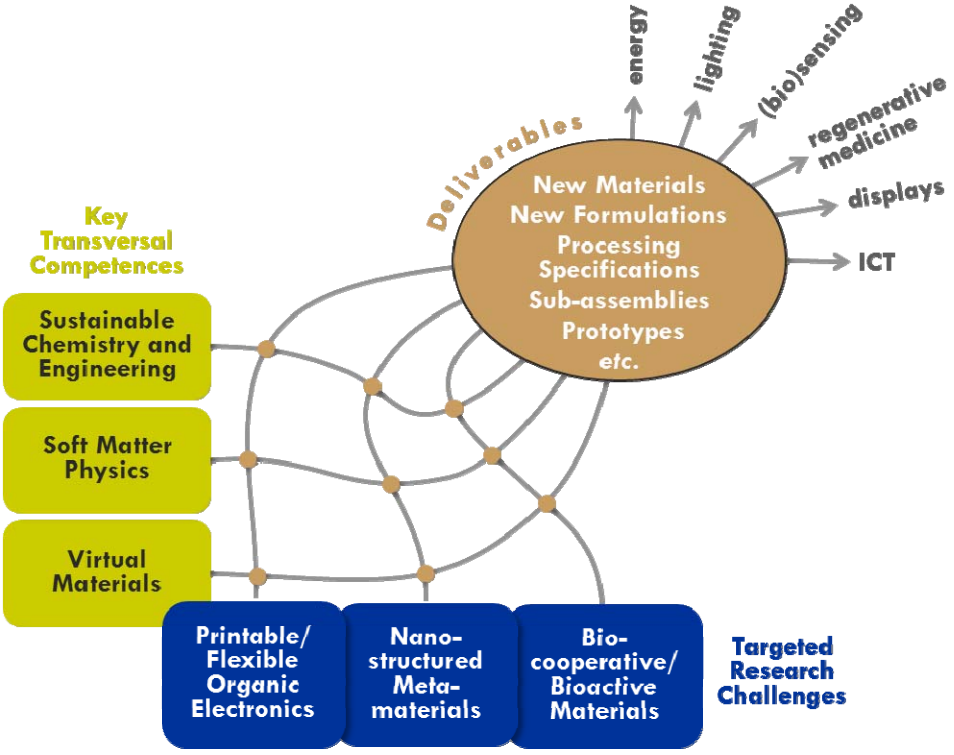
With the high experienced researchers gathered in this LabEx, we expect to achieve strong breakthroughs in three main fields; (i) Organic electronics, in order to switch from silicon-based to organic semiconductors which are way more flexible and can be formulated in the form of inks; (ii) Metamaterials, which are artificial composite materials with extraordinary electromagnetic or acoustic properties; and (iii) Bioactive materials, which may serve as matrices to conduct tissue regeneration, and in implants to support cell transplantation by the mean of tissue engineering.

As UBx boasts a unique combination of renowned scientific competencies materials design, synthesis, characterization and system integration, we have here a real opportunity to create added value materials with a high knowledge content, new functionalities and improved performance.

Etienne DUGUET

PARTNERS

- ICMCB (UPR 9048)
- LCPO (UMR 5629)
- ISM (UMR 5255)
- LCTS (UMR 5801)
- CRPP (UPR 8641)
- LOF (UMR 5258)
- LOMA (UMR 5798)
- I2M (NEW UMR FROM 2011)
- IMS (UMR 5218)
- CBMN (UMR 5248)
- ARNA (U869)
- BIOTIS (U577)



Innovate for tomorrow's materials

Already responding to our future needs and challenges for advanced materials

AMADEus researchers will focus their efforts on 3 Key Transversal Competences, which will serve 3 first Targeted Research Challenges, sharing common tools: the synthesis of high purity and high precision components, the study of complex fluids behavior far from equilibrium, the self-assembly control of complex fluids and the development of 2D and 3D printing processes.

Bordeaux - Aquitaine Region - France

UNIVERSITÉ DE BORDEAUX
cnrs
Inserm
Rhodia

↘ AMADEus Ambition

The overall ambition of AMADEus is to become a worldwide-recognized major cluster in materials science, engineering and technology, carrying out scientific research and innovation at the interfaces of chemistry, physics, biology and engineering.

PROFESSIONALS

With the integration of outstanding skills and infrastructure on a single location, AMADEus will create value by pushing forward the frontiers of knowledge. Researchers will find in AMADEus a complete environment for exercising their expertise. Visiting positions will be available all along the year, as well as specific training sessions and frequent symposia.

PROSPECTIVE STUDENTS

This LabEx aims to develop the skills and competences of young graduates in the field of advanced materials. The corresponding program will be partly designed on the basis of the existing Erasmus Mundus FAME Master and International Doctoral School IDS-FunMat. Particular attention will be paid to the skills needed for international careers, the implementation of e-learning tools, the improvement of employability in the industry and the preparation for academic careers.

CONNECTIONS WITH ECONOMIC ACTORS

This includes: (i) the involvement of industrial partners or representatives in the steering committee; (ii) exchange programs with numerous student internships each year; (iii) licensing to industry of public research-owned patents and technologies; (iv) development of specialized programs for life-long learning for their employees or customers; (v) subsidies for fundraising campaigns organized by the Bordeaux University Foundation.

INDUSTRIALS AND ECONOMICS NETWORKS

AMADEus seeks to efficiently exploit the results of its research activities. It is expected that our research will lead to valuable **new patent-protected technologies**. Technology transfer will be possible towards companies already involved in partnerships. The creation of start-up companies and new enterprises will also be a privileged way. In this perspective, the LabEx will benefit from the support of several entities *i.e.* the existing Carnot Institute, the existing Bordeaux University Foundation (fundraising), and the candidate IRT and SATT.

↘ World-Class characterization platforms

- AMADEus is providing technological platforms for materials' characterization and research:
- Electron microscopy facility (CREMEM): with high-performance microscopes: (HR-)TEM, STEM, cryo-SEM, (HR-)SEM, environmental SEM, X-EDS analysis, EELS;
- Surface characterization facility (CeCaMA): with electron probe microanalyzer, X-ray and UV photoelectron spectroscopy, Auger electron spectroscopy and AFM techniques;
- Structural biology facility (IECB service): including high magnetic field liquid and solid NMR spectroscopy, mass spectrometry, X-ray diffraction (SAXS and WAXS), surface plasmon resonance, molecular dynamics and numerical simulations, biochemistry, cell sorting and chromatography.

AMADEus researchers will also be able to enjoy the associated EquipEx project "ELORPrintTec" (led by Pr. G. Hadziioannou), which is to establish a "Bordeaux University Facility for the Printed Organic Electronics: from Molecules to Devices and System Architectures as well as their Commercialization".

KEY FIGURES OF AMADEus

- 130 researchers and 32 engineers, covering complementary research fields.
- 3156 scientific publications and 105 patents
- 177 PhD students and 80 post-doctoral positions
- 7 starts-up companies created since 1995 employing more than 60 persons.
- an expected investment of 320 M€ within next 10 years

AMADEus PUBLIC FINANCIAL SUPPORT REQUESTED

INVESTISSEMENTS D'AVENIR

23.3 M€

BECOME A SPONSOR THROUGH

fondation Bordeaux Université

Contact information
etienne.duguet@u-bordeaux1.fr