

**Université de Bordeaux**

**Sciences de la Matière et du  
Rayonnement**

<https://smr.u-bordeaux.fr/>

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Prof. UB in Chemistry at ISM

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Prof UB in Physics at LOMA

# Welcome to the University of Bordeaux

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**A pluridisciplinary university (sciences, biology, medicine, law, economics and social sciences) with the exception of literature and history (Université Bordeaux Montaigne)**

**11 research departments and two institutes (Lyric and ISVV) hosting about 60 research units**

<https://www.u-bordeaux.fr/recherche/structures-de-recherche/departements-de-recherche>

# Sciences de la Matière et du Rayonnement (SMR)

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**SMR = Physics and Chemistry department**

## Five broad thematics :

- ❖ *Molecules and Macromolecules*
- ❖ *Condensed Matter and Soft Matter*
- ❖ *Advanced Materials*
- ❖ *Nuclei, Molecules, Radiation and Universe*
- ❖ *Photonics*

<https://smr.u-bordeaux.fr/>

## Dpt SMR in few numbers :



**11**

Research Units

**1**

Service Unit

**10**

Platforms

**810**

Researchers  
and  
technical/admini  
strative  
staff

**390**

PhD-students

**2**

Doctoral Schools:

- ED Sciences Chimiques
- ED SPI

# Dpt SMR- 11 Research Units (Physics and Chemistry)

**CELIA Centre Lasers Intenses et Applications (CNRS INP)**

*MEVEL Eric*

**CRPP Centre de Recherche Paul Pascal- (CNRS INC)**

*ZAKRI Cécile*

**ICMCB Institut de Chimie de la Matière Condensée de Bordeaux (CNRS INC)**

*AYMONIER Cyril*

**ISM Institut des Sciences Moléculaires (CNRS INC)**

*FOUQUET Eric*

**LAB Laboratoire d'Astrophysique de Bordeaux (CNRS INSU)**

*BORDE Pascal*

**LCPO Laboratoire de Chimie des Polymères Organiques (CNRS INC)**

*LECOMMANDOUX Sébastien*

**LCTS Laboratoire des Composites Thermo-Structuraux (CNRS INC)**

*VIGNOLES Gérard*

**LOF Laboratoire du Futur (CNRS INC)**

*GUILLOT Pierre*

**LOMA Laboratoire Ondes et Matière d'Aquitaine (CNRS INP)**

*PISTOLESI Fabio*

**LP2I Laboratoire de Physique des Deux Infinis de Bordeaux (CNRS IN2P3)**

*PIQUEMAL Fabrice*

**LP2N Laboratoire Photonique, Numérique et Nanosciences (CNRS INP)**

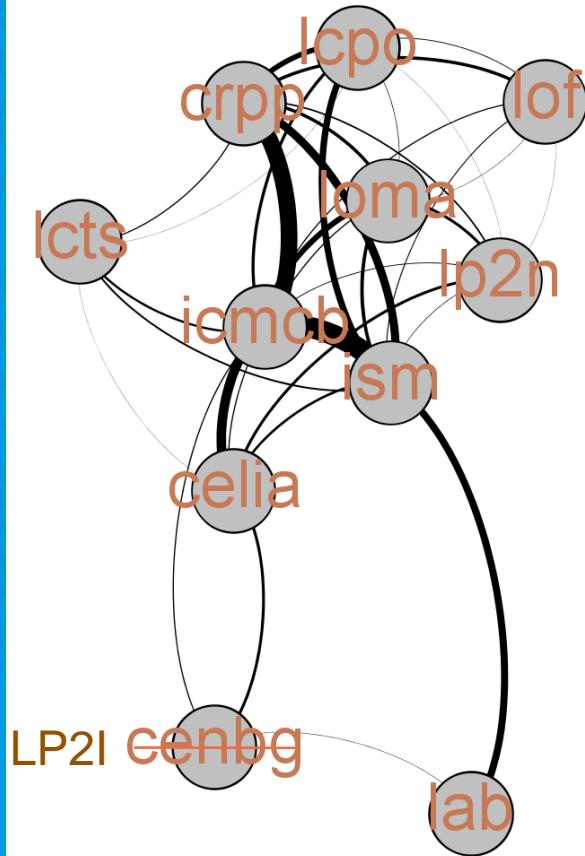
*COGNET Laurent*

## Autres tutelles



SOLVAY

# Dpt SMR -Laboratoires interconnexions



- Two units are also attached to **INSU (LAB)** and **IN2P3 (LP2I)**  
They are involved in extended international research projects  
**in astrophysics** and **high-energy physics**  
(JUNO, CTA, Desir, Supernemo, ALMA, GAIA, VLBI, JWST, ARIEL)
- Implication of the CEA : CELIA and LCTS
- Lot of partnerships with industry : LCTS (Safran) and LOF (Solvay)
- Startups: Carbon Waters, Emulseo, Tree Frog Therapeutics

# Dpt SMR – Université de Bordeaux Programs

SMR department hosts two **GPR funded by UB** :

- ❖ **LIGHT (Light sciences and its applications)** . *Coordinator* : **Brahim Lounis** (Professor at LP2N) + EUR Light
- ❖ **PPM (Post Petroleum Materials)**. *Coordinator* : **Daniel Taton** (Professor at LCPO)

Two SMR labs are also involved in the GPR **BRAIN\_2030 (Neurocampus)**

**SMR department also hosts two « Réseaux de Recherche Impulsion » (RRI)**

- ❖ **Frontiers of Life**. *Coordinator* : **Jean-Christophe Baret** (PR at CRPP)
- ❖ **Origins**. *Coordinator* : **Franck Selsis** (DR CNRS at LAB)

**Two « challenges (défis) » funded by the department :**

- ❖ **Quantum Matter (Ludovic Jaubert, LOMA)** and **DEMAIN (Ludovic Mathieu, LP2I)**

Some SMR labs are also involved in other **RRIs**:

- ❖ **BEST** hosted by **SIN**
- ❖ **IMPACT - Imaging for Precision medicine within A Collaborative Translational program** (hosted by **STS**)
- ❖ **NEWMOON - NEW Models in Oncology** (hosted by **SBM**)

# Dpt SMR – Recent and on-going European Grants

## ERC starting grants (2022) :

**Samuel Beaulieu UTOPIQ** – Centre lasers intenses et applications  
*Ultrafast topological engineering of quantum materials*

**Chloé Grazon COMET** – Institut des sciences moléculaires  
*On-demand COMMunication between fluorescent organic nanoparticles through Energy*

## ERC Consolidators grants (2021) :

**Thomas SALEZ EMetBrown**, Laboratoire Ondes et Matière d'Aquitaine  
*Brownian Motion near Soft Interfaces*

## ERC Advanced grants (2022) :

**Philippe Lalanne, UNSEEN** – Laboratoire Photonique, Numérique, Nanosciences  
*Nanostructure-Based Design of Visual Perception using High-Index Disordered Metasurface Physics*

**Philippe Poulin, PERLA** – Centre de recherche Paul Pascal  
*Percolation and conductivity in fluids containing rod-like particles*

## ERC Synergy (2020) :

« **Ensemble, Structure and functions of the brain extracellular space** »

**Laurent Groc et Valentin Nägerl** – Institut interdisciplinaire de neurosciences

**Laurent Cognet** – Laboratoire Photonique, Numérique, Nanosciences

**Erwan Bezard** – Institut des Maladies Neurodégénératives



# Dpt SMR – Internal scientific events and openings to other departments



## Annual Scientific day

- Eventually jointly with another department (joint day SMR/SIN in November 2023)

## Many colloquiums or symposiums

## Annual internal SMR AAP

Participation of many teams to the **RIE call (Recherche Interdisciplinaire et Exploratoire)** between 25-30 projects submitted

# Alain ASPECT, Nobel Prize 2022 in Physics

«Étrange physique quantique : de la première à la seconde révolution quantique »  
Conference organized jointly by IOGS and the University of Bordeaux, 25 January 2023



# Anne L'Huillier , Nobel Prize 2023 in Physics

Doctor Honoris Causa of UB (28 March 2024)

Symposium on **attosecond physics** (29 March 2024)



# Anne L'Huillier , Nobel Prize 2023 in Physics

Symposium on **attosecond physics** (29 March 2024) : with students



# Conclusion :



**Several missions/perspectives for SMR :**

- **Identify research thematic**s for the next decade in view of the expected increase of permanent positions in the near future.
- **Use scientific events (like today) and interdisciplinary calls (RIE) to develop links with teams outside SMR. Some of the most active and promising research activities involves teams from two or even more departments.**
- **Attract and invite outstanding foreign experts using the Visiting Scholar Programs or other fundings to enrich our teams.**
- **Attract talented students and postdoctoral researchers using EUR and UBgrads programs.**