M. MATHIEU FRÉGNAUX

INGENIEUR(E) DE RECHERCHE
IR - Equipe EPI - Assistant de Prévention
Université de Versailles Saint-Quentin-en-Yvelines > UFR des sciences > Institut Lavoisier de Versailles (ILV) >

Institut Lavoisier de Versailles (ILV)

Coordonnées

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Itinéraire vers ce lieu **Site de l'UFR des Sciences** 45 avenue des États-Unis
78035 Versailles cedex

Discipline(s)

Chimie, Physique

Thèmes de recherche

Research topics: surface and material science

Topic I: Photoemission and related techniques

- ILV scientific and technical manager in photoemission
- XPS, UPS characterizations (regular and angle resolved analyses, mapping, depth profiling)
- Operando XPS (device polarization, optical stimuli)
- REELS, LEIS, in situ annealing
- Synchrotron based photoemission: NAP-XPS and time resolved PES (TEMPO /SOLEIL), PEEM (HERMES/SOLEIL), HAXPES (KMC-1/BESSY), XAS (APE /ELETTRA)

Topic II: Optical characterizations

- Laser safety manager
- ILV-EPI scientific and technical manager of optical characterization tools
- Photoluminescence and Raman spectrometry on thin films and solutions
- Spectroscopic ellipsometry

Field of expertise

- Semiconductors (II-VI, III-V, IV)
- Oxides (perovskite oxides)
- 2D materials

R&D projects with industrial partners

- III-V Lab, Thales Research & Technology, 3SP Technologies, Lynred, Linxens
- TotalEnergies, Hutchinson
- Saint Gobain Recherche
- IPVF
- Valeo

Activités / CV

Current Position

- **Since 2015. Research Engineer** at CNRS (French National Centre for Scientific Research
  Co-manager of CEFS2 facilities, responsible of optical benches (PL, Raman, ellipsometry)
  Equipe EPI, Institut Lavoisier de Versailles, France

Education

- **2012 PhD in Condensed Matter Physics** obtained at University of Lorraine, Metz (France)
  Thesis: Elaboration and characterization of cadmium sulfide (CdS) nanocrystals – nanostructured thin film deposition
  Supervision: Jean-Pierre Laurenti / Jean-Jacques Gaumet

Previous positions

- **2014-2015: Research Scientist (Postdoctoral Fellow)**
  French Alternative Energies and Atomic Energy Commission (CEA) - LETI / PFNC - Grenoble (France)
  Advanced characterization protocol development for bidimensional (2D) transition metal dichalgogenide monolayers (MoS2) - integration in microelectronic devices (transistors)
- **2013-2014: Research associate – lecturer (ATER)**
  Université de Strasbourg (France)
  Teaching Physics at Télécom Physique Strasbourg
  Study of doped silicon (Si), germanium (Ge) and ternary InxGa1-xAs nanocrystals grown by ion beam synthesis: potential active layers for solar cells or memories
- **2013: Postdoctoral Fellow**
  CNRS / Ecole Nationale Supérieure des Industries Chimiques (ENSIC) - Nancy

(France)

ANR «NanoZnOTox»: Bioperception, toxicity and stability of zinc oxide (ZO) nanocrystals.

Informations complémentaires

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