



# Institut Lavoisier de Versailles

## M. MATHIEU FRÉGNAUX

INGENIEUR(E) DE RECHERCHE

IR - Equipe EPI - Assistant de Prévention

Université Versailles St-Quentin-en-Yvelines > UFR des sciences > Institut Lavoisier de Versailles (ILV) >

Institut Lavoisier de Versailles (ILV)

### Coordonnées

#### **Adresse**

45 avenue des États-Unis Bâtiment Lavoisier 78035 Versailles Cedex

BUREAU

CEFS2

TÉL

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ADRESSE MAIL

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**A**

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

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### 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 dichalcogenide monolayers (MoS<sub>2</sub>) - 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 In<sub>x</sub>Ga<sub>1-x</sub>As 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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IdRef