# AXE2 - PUBLICATIONS ET THÈSES EN COURS

## Thèses en cours / Current PhDs

» Thomas Ribault (2025-2028)

**" Etude de jonctions p-n à base de Ga2O3 pour application à des diodes de haute puissance"**

*Direction de thèse:* Yves Dumont, Ekaterina Chikoidze, Jean-Louis Cantin (INSP-Sorbonne Université)

»

Longhe Li (2024-2027)

**" Visualisation, contrôle et modélisation des aspects spatio-temporels de la dynamique des transitions de phase dans les cristaux moléculaires à transition de spin "**

*Directeur de thèse:* Kamel Boukheddaden

»

Moussa MEBARKI (2023-2026)
**"Intégration d'hétérostructures ferroélectriques pérovskites oxydes sur silicium et substrats souples : études du transfert par couche sacrificielle et de la nucléation sur nano-feuillets 2D"**
*Directeur de thèse: Yves* Dumont

» Thèses soutenues FOX /Defended PhDs FOX

» Thèses soutenues P2MC /Defended PhDs P2MC

## Publications 2026 - ....

**2026**

L. Li, M. Sy, N. di Scala, and K. Boukheddaden
"**A streamlined coupled map lattice approach for spatiotemporal dynamics in spin-crossover materials**"
Journal of Alloys and Compounds, Oct. 2026, doi: 10.1016/j.jallcom.2026.191461.

M. Mezhoud, D. Dagur, P. C. Shiny, et al.
"**The role of oxidation state and disorder in metallic conduction of SrVO3**"
J. Mater. Chem. C, Oct. 2026, doi: 10.1039/d6tc00862c.

R. Traiche, H. Oubouchou, and K. Boukheddaden
"**Elastic frustration and multi-stability in 1D spin-crossover chains: A homogeneous electro-elastic approach**"
J. Chem. Phys., Oct. 2026, doi: 10.1063/5.0350029.

R. Sharma, S. Mukherjee, F. Ibrahim, et al.
"**Rashba Engineering at van der Waals Interfaces**"
ACS Nano, Aug. 2026, doi: 10.1021/acsnano.6c08362.

M. S. Pessoa, P. S. Moscon, D. Schmool, E. P. Muniz, J. J. K. Ribeiro, T. Ragazzi-Rocha, P. E. N. de Souza, J. R. C. Proveti, and P. C. Morais,
**"Annealing-Induced Evolution of Magnetic Anisotropy and Coercivity in Green-Synthesized NiFeO Nanoparticles"**
ACS Appl. Nano Mater. (2026).

Courtin, Jules, F. Ibrahim, D. Benettin, et al.

"**High temperature ferromagnetism in epitaxial monolayers of Co-doped Fe 5 GeTe 2**
"
Phys. Rev. Lett., (2026), doi: 10.1103/j5rj-f4w4.

J. Linares, C. Cazelles, P. R. Dahoo, K. Boukheddaden,
**"Monte Carlo Simulations of Thermal Behavior in Two-Block Spin-Crossover Structures"**,
Symmetry **18**, 757 (2026)

C. A. Rodríguez Cortéz, M. Mebarki, B. Berini, et al.
"**Preserved Magnetic Functionality in Freestanding Strain-Engineered Nanocomposite Thin Films**"
ACS Appl. Nano Mater., May 2026, doi: 10.1021/acsanm.6c00973.

A. Degezelle, J. Strobelt, S. Loebner, et al.
"**Light-Induced Photomechanical Patterning of Ferroelectric Polarization**"
ACS Appl. Mater. Interfaces, Apr. 2026, doi: 10.1021/acsami.5c24848.

F. Egyenes, M. Moško, Z. Chi, A. Vincze, K. Hušeková, E. Dobroka, A. Rosová, M. Precner, P. Ondrejka, E. Chikoidze, M. Mikolášek, M. Miušík, M. apajna, F. Gucmann,
**"Anomalous hopping regime at the Mott transition from disordered semiconductor to disordered metal in Si-doped Ga2O3"**,
Phys. Rev. B (2026) – [HAL]

M. B. Ghasemian, M. A. Laskoukalayeh, A. Zavabeti, S. S. Mofarah, N.-A. Nor-Azman, N. Flores, J. Ireland, E. Chikoidze, and K. Kalantar-Zadeh,
**"Nanoporous Liquid Metal Silica Aerogels for Solar Energy Capture and Heat Transfer"**,
ACS Applied Nano Materials (2026) – [HAL]

B. Berini, R. Burcea, M. Vallet, A. Fouchet, D. Aureau, M. Frégnaux, C. Carretero, S. Hurand, V. Demange, Y. Dumont,
**"Effect of various buffer layers for the large-scale atomic layer deposition integration of archetypical SrTiO3 thin film on silicon substrate"**,
Appl. Surf. Sci. **736**, 166810 (2026) – [HAL]

T. Dufaud, J. Linares, D. Sohier,
**"Parallel Dynamic Programming for the Exact Computation of Density of State for 2D Spin-Crossover Nanomaterials"**,

Algorithms **19**, 111 (2026) – [HAL]

A. Slimani, K. Boukheddaden,
**"Numerical optimization of the physical properties of thermochromic layers based on spin transition materials for cold coating applications"**,
Materials & Design **263**, 115514 (2026) – [HAL]

M. A. Bento, N. E. I. Belmouri, A. Fernandes, D. Ndrio, G. Bouchez, L. Li, L. P. Ferreira, H. P. Diogo, J. Rocha, F. Viñes, A. Gil, K. Boukheddaden, P. N. Martinho,
**"Unprecedented direct spatiotemporal imaging of a reversible interface propagation in a switchable cooperative Fe(III) spin crossover material"**,
Inorganic Chemistry Frontiers **—** (2026)

N. di Scala, N. El Islam Belmouri, Y. Singh, K. Boukheddaden,
**"Chapter 7: Theoretical Advances in Understanding the Physics of Core–Shell Spin Transition Nanoparticles"**,
in 2D and 3D Nanostructures: Structures, Properties, and Applications, Jenny Stanford Publishing (2026)

A. De Vita, V. Polewczyk, G. Panaccione, G. Vinai,
**"Valence Modifications in Hygroscopic VI3 Degraded Crystals via Soft X-ray Synchrotron Radiation"**,
J. Phys. Chem. C **130**, 3452 (2026) – [HAL]

F. Mazzola, W. Brzezicki, C. Bigi, et al.,
**"Anomalous Spin-Optical Helical Effect in Ti-Based Kagome Metal"**,
Advanced Materials e22533 (2026) – [HAL] – [arXiv]

Publications 2022-2025

Publications 2018-2021 FOX

Publications 2015 - 2021 P2MC

Publications 2013 - 2017 FOX

Publications 2010 - 2014 P2MC

Publications 2008 - 2012 FOX

Publications 2006 - 2009 P2MC