



GEMaC

Groupe d'Étude
de la Matière Condensée

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

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)

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]

C. Rodríguez Cortéz, M. Mebarki, B. Berini, D. Demaille, V. Polewczyk, Y. Zheng, P.

Bhuyan, B. Vodungbo, E. Jal, H. Popescu, N. Jaouen, Y. Dumont, M. Hennes, F. Vidal,

"Synthesis and Transfer of Freestanding Strain-Engineered Vertically Aligned Nanocomposite Thin Films",

arXiv **2603.15772** (2026) – [arXiv]

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