

CURRICULUM VITAE

PERSONAL INFORMATION

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Short biography and relationship to thermoelectrics

After obtaining my PhD from the University of Caen, France, in 2003 in the field of superconducting oxides, I devoted my research to the development of thermoelectric materials. Initially rooted in materials processing, my first investigations focused on the formulation and optimization of synthesis and densification routes of oxides and sulfides, particularly during my postdoctoral experiences in Japan and Belgium and following my appointment as a CNRS researcher in 2005. Over the past decade, my research has progressively evolved toward a stronger solid-state chemistry perspective, with the objective of elucidating the relationships between crystal chemistry and the electrical and thermal transport properties in chalcogenide materials. My research activities combine advanced solid-state synthesis with state-of-the-art structural and microstructural characterization techniques to understand how atomic-scale and microscopic features govern macroscopic transport behaviour.

These works have provided deeper insights and, in some cases, predictive understanding of structure–microstructure–property relationships in thermoelectric materials. They have led to the discovery of ordering/disordering effects, new compounds, and novel structures. Moreover, these studies rely on substantial work in synthesis, formulation, and densification of materials, which is essential for producing pure and robust samples.

Not being trained as a crystallographer or solid-state chemist, this wide-ranging research has been accomplished through teamwork within the CRISMAT laboratory and in collaboration with various partners in France and abroad (Europe, Japan, India, China, USA). I also work closely with physicists and theoreticians to better predict and understand the transport and vibrational properties of materials.

The importance of materials synthesis and crystal chemistry, in relation with transport properties, has been the central tenet of my publications and communications (210+ articles, 12 reviews & book chapters, 2 patents, 70+ invited talks, 30+ invited seminars).

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To the Members of the European Thermoelectric Society (ETS),

I hereby confirm my agreement to stand as a candidate for a board position within the European Thermoelectric Society (ETS).

As CNRS Research Director at the CRISMAT laboratory (CNRS/ENSICAEN/Université de Caen Normandie, France), my research activities are dedicated to the development and understanding of thermoelectric materials, with a particular focus on crystal chemistry and transport properties of chalcogenides. Over the years, I have actively contributed to the thermoelectric community through scientific collaborations, international projects, conference organization, and participation in various academic and scientific committees.

I would be honored to contribute further to the activities and development of ETS, to support the visibility and growth of the thermoelectric community in Europe, and to promote scientific exchanges and collaborations among researchers, students, and industrial partners.

Yours sincerely,

Emmanuel Guilmeau