

# Short Curriculum Vitae: Bertrand LENOIR



## Personal information

Born September 21<sup>st</sup> 1965, Nationality: French, Married, 2 children  
Jean Lamour Institut (IJL, UMR 7198 CNRS - University of Lorraine)  
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## Education

2000 [Habilitation](#), Institut National Polytechnique de Lorraine (INPL), Nancy (France)  
1994 [Ph.D. in Materials Science](#) “Synthesis and transport properties of Bi-Sb alloys”, INPL, Nancy (France) -  
Thesis supervisor: Prof. H. Scherrer  
1991 [MSc in Condensed Matter Physics](#), University Henri Poincaré, Nancy (France) – [Master of Engineering](#),  
University Henri Poincaré, Nancy (France)

## Current positions

2010 [Full Professor](#), University of Lorraine (UL), Nancy (France)  
2017 [Head of the “Materials with thermoelectric properties” team](#) at IJL – 8 members (3 researchers, 1  
engineer, 2 postdoctoral researchers, and 2 Ph.D. students).  
2023 [Co-director of the Chemistry and Physics of Solids and Surfaces Department \(CP2S\) of IJL](#) (105 members)

## Research activities

My research interests focus on the physics and chemistry of materials for thermoelectric (TE) applications, encompassing both conventional and emerging TE materials. The objective of this research is to optimize thermoelectric performance through a holistic approach that combines structural characterization, electrical and thermal property measurements over a wide temperature range (2–1000 K), and theoretical modeling. In addition to materials research, I am also involved in the development of thermoelectric generators and coolers, including both their modeling and fabrication.

## Five selected publications (over 225 in the field of thermoelectrics)

- 1- "Assessment of the thermoelectric properties of polycrystalline SnSe" S. Sassi, C. Candolfi, J.-B. Vaney, V. Ohorodniichuk, A. Dauscher, B. Lenoir - Applied Physics Letters, 104, 212105 (2014)- <https://doi.org/10.1063/1.4880817>
- 2- "Comprehensive study of the low-temperature transport properties of polycrystalline  $\text{Sn}_{1+x}\text{Te}$  ( $x = 0$  and  $0.03$ )" D. Ibrahim, C. Candolfi, S. Migot, J. Ghanbaja, A. Dauscher, B. Malaman, B. Lenoir – Physical Review Materials, **3**, 085404 (2019) - <https://doi.org/10.1103/PhysRevMaterials.3.085404>
- 3- "Innovative design of bismuth-telluride-based thermoelectric micro-generators with high output power" S. El-Oualid, F. Kosior, A. Dauscher, C. Candolfi, G. Span, E. Mehmedovic, J. Paris, B. Lenoir – Energy & Environmental Science, **13**, 3579-3591 (2020) - <https://doi.org/10.1039/d0ee02579h>
- 4- "High power density thermoelectric generators with skutterudites" S. El-Oualid, I. Kogut, M. Benyahia, E. Geczi, U. Kruck, F. Kosior, P. Masschelein, C. Candolfi, A. Dauscher, J. D. Koenig, A. Jacquot, T. Caillat, E. Alleno, B. Lenoir – Advanced Energy Materials, 2100580 (2021) - <https://doi.org/10.1002/aenm.202100580>
- 5- "Hidden in plain heat: anomalous Lorenz number in the thermoelectric alloy  $\text{Bi}_{0.4}\text{Sb}_{1.6}\text{Te}_3$ " C. Candolfi, B. Wiendlocha, V. Ohorodniichuk, P. Levinský, S. Migot, G. Steciuk, I. Terzi, A. Dauscher, S. El Oualid, B. Lenoir, Nature Communications, **16**, 11528 (2025) – <https://doi.org/10.1038/s41467-025-66578-y>

## Statement on involvement in thermoelectrics

I have been actively involved in thermoelectric research since 1991 and have contributed to the development and promotion of the field through research, supervision, scientific leadership, and community service. Over the course of my career, I have supervised 18 Ph.D. theses and mentored 13 postdoctoral researchers working on thermoelectric-related topics. In addition, I have served as a jury member for 45 Ph.D. dissertations and Habilitation à Diriger des Recherches (HDR) defenses related to thermoelectrics.

My commitment to the thermoelectric community is reflected in the organization of major scientific events. I have chaired or co-chaired several national and international conferences and symposia on thermoelectrics, including the Third European Conference on Thermoelectrics (Nancy, 2005), the Thermoelectrics Symposium at EUROMAT (Montpellier, 2011), Symposium H: Inorganic Thermoelectrics at E-MRS (Strasbourg, 2017), and the 21st European Conference on Thermoelectrics (Nancy, 2025).

I have also held several leadership positions in national and European scientific organizations dedicated to thermoelectrics. Since 2013, I have been a Board Member of the European Thermoelectric Society (ETS). At the national level, I served as Deputy Director (2007–2010) and subsequently Co-Director (2011–2014) of the French Research Network on Thermoelectrics. From 2018 to 2022, I was Director of the French Scientific Interest Group (GIS) on Thermoelectrics. My scientific contributions include 225 publications in international peer-reviewed journals and 10 book chapters.

Through these activities, I have continuously supported the advancement of thermoelectric science and technology, fostered collaborations within the community, and contributed to the training of the next generation of researchers in the field.