

Dario Narducci, PhD

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Service to Profession

2024 – 2027	President of the European Thermoelectric Society
2023 – 2025	Secretary of the International Thermoelectric Society
2019	Co-director of Course 207, 'Advances in Thermoelectricity: Foundational Issues, Materials, and Nanotechnology', International School of Physics 'E. Fermi'
2018 –	Member of the Editorial Committee, Springer Briefs in Physics
2015 –	Board member of the European Thermoelectric Society
2015 – 2017	Treasurer of the European Thermoelectric Society
2014 – 2024	President of the Italian Thermoelectric Society
2013	Co-director of the 58th course of the Solid-State Physics School, E. Majorana Foundation, Erice
2009 – 2023	Chief Technical Officer of the DeltaTi Research Consortium

Selected Publications

March 2025	**D. Narducci**, F. Giulio, A. Mazzacua, 'Dynamic Thermoelectric Generation Enables 50% Increase of Efficiency at Maximum Power', *Materials Today Physics*, 54 (2025) 101713.
Nov. 2024	A. Masci, E. Dimaggio, N. Neophytou, **D. Narducci**, G. Pennelli, 'Large increase of the thermoelectric power factor in multi-barrrier nanodevices', *Nano Energy*, 132 (2024) 110391.
Oct. 2024	L. Anatychuk, A. Burkov, J. Goldsmid, Y. Grin, K. Koumoto, **D. Narducci**, G.S. Nolas (eds.), *200 Years of Thermoelectricity. An Historical Journey Through the Science and Technology of Thermoelectric Materials (1821-2021)*, Springer Series in Materials Science, (2024) Springer Cham.
Dec. 2021	**D. Narducci**, L. Zulian, B. Lorenzi, F. Giulio, E. Villa, 'Exceptional Thermoelectric Power Factors in Hyperdoped, Fully Dehydrogenated Nanocrystalline Silicon Thin Films', *Appl. Phys. Lett.*, 119 (2021) 263903.
Dec. 2018	D. Beretta, N. Neophytou, J.M. Hodges, M.G. Kanatzidis, **D. Narducci**, M. Martin-Gonzalez, M. Beekman, B. Balke, G. Cerretti, W. Tremel, A. Zevalkink, A.I. Hofmann, C. Müller, B. Dörling, M. Campoy-Quiles, and M. Caironi, 'Thermoelectrics: From history, a window to the future', *Mater. Sci. & Eng. R*, **138** (2019) 210-255.
March 2018	**D. Narducci**, P. Bermel, B. Lorenzi, N. Wang, and K. Yazawa, *Hybrid and Fully Thermoelectric Solar Harvesting*, (2018) Springer International Publishing

Selected Grants

2023 -- 2025	NextGeneration Europe: 'Thermal conductivity at the nanoscale: thin films, nanowires, and nanopillared ultrathin layers', Grant: EU 110,000.
2017 -- 2020	H2020 EU Marie Sklodowska-Curie Global Fellowship: 'Novel hybrid thermoelectric photovoltaic devices: modeling, development, and characterization'. Grant: EUR 247,924.
2013–2016	FP7 EU NMP Project "Silicon friendly materials and device solutions for microenergy applications". Grant: EUR 395,000.
2011–2013	Research Contract "Development of Silicon Nanostructures for thermoelectrics" (DeltaTi Research Consortium). Grant: EUR 530,000
2009–2010	Research Contract "Feasibility of silicon–based nanostructured thermoelectric devices using scalable microtechnology" (ERG S.p.A.). Grant: EUR 513,000

Statement of Candidacy to the ITS Board

Despite significant advancements in thermoelectric research over the past decades — evidenced by a substantial rise in published papers — its global visibility and financial support still lag its growing scientific and technological importance. This disparity may hinder innovation and reduce its appeal to younger researchers. Throughout my career, I have actively fostered international collaboration among scientists, not only to advance research through interdisciplinary knowledge sharing but also to support science in regions where limited financial resources often stifle progress.

My contributions to ITS will continue to focus on **promoting global cooperative research** by leveraging existing tools and advocating for new initiatives from governments and international organizations. This commitment is reflected in my past efforts to establish a global thermoelectricity network connecting Asian and European countries through the European RISE program, as well as my current role as **president of the European Thermoelectric Society** and **secretary of the International Thermoelectric Society**.

Another key priority is contributing to ITS **educational initiatives**. By coordinating schools and courses, supporting international mobility, and providing grants for junior scientists to attend conferences, we can cultivate the next generation of researchers and propel thermoelectricity into the second half of the 21st century. Furthermore, increasing **societal awareness** of thermoelectric science and technology could yield substantial benefits, attracting talented young scientists while engaging companies, policymakers, and private investors. As thermoelectricity often represents a solution in search of a problem, fostering dialogue with industrial partners and public administrators will be essential in identifying novel applications and expanding its potential impact.