



Eckhard Müller

Prof. Dr. rer. nat. Eckhard Müller (*1962)

Studies	Degree in physics (Dipl.-Phys.), Universität Halle	1983 – 1988
Doctorate	Doctorate in physics (Dr. rer. nat.), Universität Halle, <i>Anisotropic transport properties of thermoelectric Bi₂Te₃ mixed crystals</i>	1997
Professional positions	Doctoral Studies, Thermoelectric Transport Phenomena, Universität Halle	1988 – 1992
	Researcher, Universität Karlsruhe	1993 – 1995
	Researcher, Universität Halle	1995 – 1996
	Researcher, Institute of Materials Research, DLR	1996 – 1998
	Group Leader, Thermal Sensors/Thermoelectric Functional Materials and Systems, Institute of Materials Research, DLR	1998 – 2009
	Head of Department “Thermoelectric Materials and Systems”, Institute of Materials Research, DLR	2009 – 2025
Current position	Co-Head of Department “Interface Design, Coatings and Corrosion Protection for Functional Material Systems”, Institute of Frontier Materials on Earth and in Space, DLR <i>(Institute / Department merged with other DLR units)</i>	since 2026
Additional functions	Professor, Thermoelectric Materials, Justus Liebig University Gießen	Since 2012
	Member, Board and Executive Board, European Thermoelectric Society	Since 2001
	Member, Board and Advisory Board, German Thermoelectric Society	Since 2005

My Commitment to Thermoelectrics

Thermoelectrics is my scientific home. I spent all of my scientific life in this field, starting as an undergraduate, constructing an automatically controlled switch for tiny thermovoltages as part of a complex Combined TE Measurement Facility which I constructed during Diploma thesis and used it during Ph.D. period to characterize numerous bismuth telluride samples, as a base for their Boltzmann-based band structure modeling.

I continued as a project employee at Karlsruhe University as part of a dynamic NASA-funded young team that developed a TE IR sensor for a spectrometer that was part of the Cassini mission. My part was building and operating an PC-controlled characterization of detectivity and dynamics of the IR sensor. Cassini was launched in 1997 to arrive at Saturn in 2004 with our sensor successfully exploring its atmosphere and moons during numerous orbits until 2019.

After a further project activity at Halle University on automatic control of a Bridgman facility for crystal growth of TE tellurides I entered my current institution, the German Aerospace Center (DLR), the national aeronautics and space research center of the Federal Republic of Germany, as a DFG project employee thirty years ago. Soon I changed into responsibility for the TE small group there, at that time working on silicides for TEG but soon also focusing on development of thermal sensors. Both lines continued till today. The group was growing into a department "Thermoelectric Materials and Systems" of up to 25 people, founded in 2009 and recently merged with DLR units on coating technology, plasma physics and corrosion into our today Department of "Interface Design, Coatings and Corrosion Protection for Functional Material Systems" that, among others, develops highly efficient materials for thermoelectric energy conversion, thermoelectric material technology, joining/contacting solutions as well as system aspects of thermoelectric generators (TEG), heat pumps, heat flux sensors and self-sufficient sensor nodes. Applications target at aerospace, automotive and energy technologies. Material development is focused on bulk and nanostructured thermoelectric materials including silicides, antimonides, complex chalcogenides, and half-Heusler compounds with particular focus on magnesium-based materials and their stability. The department develops unique TE measurement techniques and is active in national and international activities on TE standardization.

As a professor of Thermoelectric Materials at the Institute of Analytical and Inorganic Chemistry at Justus-Liebig University in Giessen, Germany, I've been teaching a lecture on TE material development and TE technology and system aspects since 2012. Various research links on material development have evolved, and several DLR Ph.D. candidates have defended at JLU.

I contributed to more than 300 international scientific publications and more than 15 patents. Our department was joining numerous national and international projects (among them a couple of EU projects) with major contributions to our research budgets and has been running active scientific collaborations to the U.S., Japan, Korea, India, France, Poland, Denmark, Portugal, Italy, Sweden, Czechia. Our TE team at DLR is very international; during last years we were hosting researchers from the US, F, IN, CAN, JP, GR, IT, Iran, Vietnam, Indonesia,...

I was among the founders of the German and the European Thermoelectric Societies and have been acting as a Board member of both societies since then in several functions. Currently I'm the ETS Treasurer and enjoy the constructive and fruitful atmosphere in the Board a lot.

After periodic expiration of my term as an ETS Board member I'm ready to join another term if elected.

in May 2026

