Curriculum Vitae

Personal Data:

Name: **Dr. Jan D. Koenig**
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Education: **Dipl. Phys.**, Albert-Ludwigs University of Freiburg, 2005, Germany
Dr. rer. nat., Justus-Liebig-University of Gießen, 2013, Germany

Biographical Summary:

Dr. Jan D. Koenig is group-leader of "Thermoelectric Energy Converters" and deputy head of the department "Energy Systems" at Fraunhofer IPM (Institute for Physical Measurement Techniques), Freiburg, Germany. In parallel to the diploma and doctoral theses, advised by Dr. Harald Böttner, he started as project manager at Fraunhofer IPM in different projects regarding thermoelectric material research, measurement systems and module development. Remarkable projects were the design and fabrication of a fully automated material measurement setup and the development of a small scale production of thermoelectric modules. The current activities cover nanoscale bulk and thin film research on Bi_2Te_3, PbTe and silicide based materials. J. Koenig built up at Fraunhofer IPM a thermoelectric bulk material processing route as well as the high temperature generator fabrication. The development of a high temperature standard for thermoelectric metrology is as well a main topic including a worldwide round-robin test started in 2013.

Actual Professional Positions:

- Group leader for "Thermoelectric Energy Converters" at Fraunhofer IPM
- Deputy head of the department "Energy Systems" at Fraunhofer IPM

Professional Activities:

- Board member of the International Thermoelectric Society *ITS* since 2013
- Executive board member of the German Thermoelectric Society *DTG* since 2009
- Co-Chair, International Conference on Thermoelectrics *ICT 2009* and European Conference on Thermoelectricity *ECT 2009* in Freiburg, Germany
- Chair, "*Thermoelectric Workshop 2012*" in Berlin, Germany
- Co-Chair, E-MRS symposium spring 2013 C: "*Advanced thermoelectrics: from materials to devices*".
- Member, International Thermoelectric Society (ITS) since 2006
- Reviewer, *Journal of Electronic Materials (JEMS)*, *Journal of Materials Research (JMR), Chemistry of Materials, Physica solidi status (a)*
- Member, Editorial Advisory Board of the open access journal *Nanothermoelectrics* since 2012
- Guest Editor, Physica solidi status (a), 2013

Publications: 2 book chapters and more than 20 scientific publications in peer-reviewed journals in the last five years

Selected publications:

1. Koenig, J.D. ; Hahn, R.;
   Thermoelectric Generators
   Book chapter in Spieß, P. (Editor); Handbook of Energy Harvesting Power Supplies and Applications, Pan Stanford Pub., 30.04.2013, Print-ISBN: 9789814241861
2. Boettner, H. ; Koenig, J.D. ;
   Nanoscale Thermoelectrics - A Concept for higher energy efficiency?
   Book chapter in Lambauer, J. (Editor); Nanotechnology and Energy - Science, Promises and Limits, Pan Stanford Pub., 31.08.2012, Print-ISBN: 9789814310819
3. Salvador, J.R.; Cho, J.Y.; Ye, Z.; Moczygemba, J.E.; Thompson, A.J.; Sharp, J.W.; Koenig, J.D.; Maloney, R.; Thompson, T.; Sakamoto, J.; Wang, H.; Wereszczak, A.A.; Meisner, G.P.;
   Thermal to Electrical Energy Conversion of Skutterudite-Based Thermoelectric Modules;
   Journal of Electronic Materials 42 (2013), No7, pp. 1389-1399
   (DOI: http://dx.doi.org/10.1007/s11664-012-2261-9)
4. Wang, H.; Porter, W. D.; Boettner, H.; Koenig, J.D.; Chen, L.; Bai, S.; Tritt, T.M.; Mayolet, A.; Senawiratne, J.; Smith, Ch.; Harris, F.; Gilbert, P.; Sharp, J.W.; Lo, J.; Kleinke, H.; Kiss, L.;
   Transport Properties of Bulk Thermoelectrics—An International Round-Robin Study, Part I: Seebeck Coefficient and Electrical Resistivity; Journal of Electronic Materials 42 (2013), No. 4, pp. 654-664
   (DOI: http://dx.doi.org/10.1007/s11664-012-2396-8)
5. Koenig, J.D.; Nielsen, M. ; Gao, Y. ; Winkler, M. ; Jacquot, A. ; Böttner, H. ; Heremans, J.:
   Titanium forms a resonant level in the conduction band of PbTe.
   In: Physical Review. B 84 (2011), No.20, Art. 205126, 5 pp.
   (DOI: http://dx.doi.org/10.1103/PhysRevB.84.205126)
6. Koenig, J.D. ; Winkler, M. ; Buller, S. ; Bensch, W. ; Schuermann, U. ; Kienle, L. ; Boettner, H.:
   Bi_2Te_3-Sb_2Te_3 superlattices grown by nanoalloying.
   In: Journal of Electronic Materials 40 (2011), No.5, pp.1266-1270
   (DOI: http://dx.doi.org/10.1007/s11664-011-1578-0)
7. Koenig, J.D.; Jacquot, A. ; Böttner, H.:
   N-type lead-chalcogenide thermoelectric materials alloyed with tin.
   In: Hogan, T.P.: Thermoelectric power generation: Symposium held November 26 - 29, 2007, Boston, Massachusetts, U.S.A. Warrendale, Pa.: MRS, 2008, pp.147-154 (Materials Research Society Symposium Proceedings 1044) (DOI: http://dx.doi.org/10.1557/PROC-1044-U04-10)
8. Koenig, J.D. ; Winkler, M. ; Boettner, H.:
   Transport properties of doped, nanostructured IV-VI epitaxial films grown by MBE.
   In: Journal of Electronic Materials 38 (2009), No.7, pp.1418-1422
   (DOI: http://dx.doi.org/10.1007/s11664-009-0717-3)
9. Koenig, J.D. ; Boettner, H. ; Tomforde, J. ; Bensch, W.:
   Thermoelectric properties of phase-change materials.
   In: International Conference on Thermoelectrics, ICT, Proceedings, 2007, pp.390-393
   (DOI: http://dx.doi.org/10.1109/ICT.2007.4569502)
10. Scholdt, M. ; Do, H. ; Lang, J. ; Gall, A. ; Colsmann, A. ; Lemmer, U. ; Koenig, J.D. ; Winkler, M. ; Boettner, H.; Organic semiconductors for thermoelectric applications.
    In: Journal of Electronic Materials 39 (2010), No.9, pp.1589-1592
    (DOI: http://dx.doi.org/10.1007/s11664-010-1271-8)