

Dr.-Ing. Norbert Hort
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Education

- 2002 Dr.-Ing., Materials Science and Engineering, Technical University Clausthal, Clausthal, Germany
1994 Dipl.-Ing., Materials Science and Engineering, Technical University Clausthal, Clausthal, Germany

Professional Experience

- Since 2003 - Head Magnesium Processing Department, Magnesium Innovation Centre, Institute of Materials Research, Helmholtz-Zentrum Geesthacht, Geesthacht, Germany; Spokesman for the research field "Magnesium" within the R&D program "Advanced Engineering Materials" of the Helmholtz Association
2000 - 2002 Scientist, Magnesium Innovation Centre, Institute of Materials Research, GKSS Research Centre, Geesthacht, Germany
1994 - 1999 Scientist, Materials Science and Engineering, Institute of Materials Science and Engineering, Technical University Clausthal, Clausthal, Germany

Fields of Work

Castability of Magnesium alloys (fluidity, hot tearing, and density of melts)
Grain refinement
Development and characterization of high temperature stable Mg alloys and Metal Matrix Composites
Development and characterization of alloys for biodegradable Mg implants

Memberships

- VDI Verein Deutscher Ingenieure e.V.
The Association of German Engineers
DGM Deutsche Gesellschaft für Materialkunde e.V.
German Society of Materials
VDG Verein Deutscher Gießereifachleute e.V.
German Association of Casting Experts
TMS The Minerals, Metals & Materials Society

¹ Officially renamed on 01.11.2010; formerly known as GKSS Research Centre

Others

	Chairman of the Technical Committee "Magnesium" at the German Society of Materials Science, Germany
	Member of the Editorial Board of Materials Science and Engineering B
	European Database Site Coordinator of the NSF-ERC "Revolutionizing Metallic Biomaterials"
	Member of the Technical Committee "Magnesium Technology" at the TMS, USA
2014	Designated Co-Organizer of the TMS Symposium "Magnesium Technology 2012" at the annual TMS spring meeting
2013	Designated Organizer of the TMS Symposium "Magnesium Technology 2012" at the annual TMS spring meeting
2012	Designated Co-Organizer of the TMS Symposium "Magnesium Technology 2012" at the annual TMS spring meeting
2010/11	Member of the Organizational Committee of the 5 th Conference on Light Metal Technology 2011
Since 2010	Lecturer at the Leuphana University, Lüneburg, Germany, Materials Sciences
2009	Member of the National Committee of the 8 th International Conference Magnesium Alloys and their Applications
2008/2009	Lecturer at Hamburg University of Technology, Hamburg, Germany, Materials Sciences
2007/2008	Lecturer at Lübeck University of Applied Sciences, Lübeck, Germany, Materials Science
2006	Member of the National Committee of the 7 th International Conference Magnesium Alloys and their Applications
2004-2006	Reviewer for the Austrian Federal Ministry for Transport, Innovation and Technology in the A3-Tech programme, Austria
2009	Reviewer for the Natural Sciences and Engineering Council of Canada, Canada
Since 2009	Reviewer for the Czech Science Foundation, Czech Republic
2011	Reviewer for the Kentucky Engineering and Science Foundation, Kentucky, USA

Geesthacht, July 2011

Selected Relevant Publications

1. **N. Hort**, Y. Huang, K. U. Kainer, Intermetallics in the Magnesium alloys and their effects in improving mechanical properties, *Advanced Engineering Materials* 8 (2006) 235-240
2. **N. Hort**, Y. Huang, T. Abu Leil, P. Maier, K. U. Kainer, Microstructural Investigations of the Mg-Sn-xCa system, *Advanced Engineering Materials* 8 (2006) 359-364
3. A. Kozlov, M. Ohno, T. Abu Leil, **N. Hort**, K. U. Kainer, R. Schmid-Fetzer, Phase equilibria, thermodynamics and solidification microstructures of Mg-Sn-Ca alloys, Part 2: Prediction of phase formation in Mg-rich Mg-Sn-Ca cast alloys, *Intermetallics* 16 (2008) 316-321
4. F. Witte, J. Fischer, F. Beckmann, M. Störmer, **N. Hort**, 3D microstructural analysis of magnesium alloy AZ91D by synchrotron-radiation based microtomography, *Scripta Materialia* 58 (2008) 453-456
5. R. Zeng, W. Dietzel, F. Witte, **N. Hort**, C. Blawert, Progress and challenge for magnesium alloys as biomaterials; *Advanced Biomaterials in Advanced Engineering Materials* 10 (2008) B3-B14
6. Y. Huang, H. Dieringa, **N. Hort**, P. Maier, K. U. Kainer, Y. Liu, Evolution of microstructure and hardness of AE42 alloy after heat treatments, *Journal of Alloys and Compounds* 463 (2008) 238-245
7. Y. Huang, H. Dieringa, **N. Hort**, T. Abu Leil, K. U. Kainer, Y. Liu, Effects of segregation of primary alloying elements on the creep response in magnesium alloys, *Scripta Materialia* 58 (2008) 894-897
8. F. Witte, **N. Hort**, C. Vogt, S. Cohen, K. U. Kainer, F. Feyerabend, Current developments in biodegradable magnesium, *Current Opinions in Solid State and Materials Science* 12 (2008) 63-72
9. D. Fechner, C. Blawert, **N. Hort**, K. U. Kainer, Recycling of magnesium drive train components, *Science in China E* 52 (2009) 148-154
10. S. S. Khan, **N. Hort**, J. Eiken, I. Steinbach, S. Schmauder, Numerical determination of heat distribution and castability simulations of as cast Mg-Al alloys, *Advanced Engineering Materials* 11 (2009) 162-168
11. Z. Zhen, **N. Hort**, Y. Huang, O. Utke, N. Petri, K. U. Kainer, Hot tearing behaviour of binary Mg-1Al alloy using a contraction force measuring method, *Int. J. Cast Metals Research* 22 (2009) 331-334
12. **N. Hort**, Y. Huang, D. Fechner, M. Störmer, C. Blawert, F. Witte, C. Vogt, H. Drücker, R. Willumeit, K. U. Kainer, F. Feyerabend, Magnesium Alloys as Implant Materials - Principles of Property Design for Mg-RE Alloys, *Acta Biomaterialia* 6 (2010) 1714-1725
13. J. Fischer, M. Prosenc, M. Wolff, **N. Hort**, R. Willumeit, F. Feyerabend, Tetrazolium salt - based assays are not suitable for cytotoxicity testing of magnesium and its alloys, *Acta Biomaterialia* 6 (2010) 1813-1823
14. F. Feyerabend, J. Fischer, J. Holtz, F. Witte, R. Willumeit, H. Drücker, C. Vogt, **N. Hort**, Evaluation of short term effects of rare earth and other elements used in magnesium alloys on primary cells and cell lines, *Acta Biomaterialia* 6 (2010) 1834-1842
15. M. G. Pokorny, C. A. Monroe, C. Beckermann, Z. Zhen, **N. Hort**, Simulation of Stresses During Casting of Binary Magnesium-Aluminium Alloys, *Met Mater Trans A* 41 (2010) 12, 3196 – 3207
16. Y.V.R.K. Prasad, K.P. Rao, **N. Hort**, K. U. Kainer, Effect of thermal and mechanical treatments on the hot working response of Mg-3Sn-1Ca alloy, *International Journal of Materials Research* 101 (2010) 300 - 306
17. T. Di, F. Feyerabend, **N. Hort**, R. Willumeit, D. Höche, XPS studies of magnesium surfaces after exposure to Dulbecco's Modified Eagle Medium, Hank's Buffered Salt Solution and Simulated Body Fluid, *Advanced Engineering Materials* 12 (2010) B699 - B704
18. J. Fischer, D. Proefrock, **N. Hort**, R. Willumeit, F. Feyerabend, Improved cytotoxicity testing of magnesium materials, *Materials Science and Engineering B* 176 (2011) 830 - 834

More than 50 publications in peer reviewed journals, more than 140 conference contributions in proceedings, 4 chapters in books (4 more in preparation), more than 150 presentations and lectures without proceedings, main or co-author in 27 invited lectures, 12 patent applications (3 granted), ISI Web of Science h-Index 13