

## Prof. Dr. rer. nat. Olav Hellwig

Magnetic Functional Materials, born August 30<sup>th</sup>, 1970

### Scientific and professional career:

- seit Juni 2016 Professor (TU Chemnitz) and project lead (HZDR) for Magnetic Functional Materials Chemnitz/Dresden area, Germany
- 2015 - 2016 Technologist for adv. characterization of Heat Assisted Magnetic Rec. Media, HGST a Western Digital Company, San Jose CA, USA
- 2012 – 2015 Director/Manager for Heat Assisted Magnetic Rec. Media Research San Jose Research Center, HGST a Western Digital Company, San Jose, CA, USA
- 2005 – 2012 Research Staff Member at Hitachi GST, San Jose Research Center, Advanced Magnetic Recording Media Group, San Jose, CA, USA
- 2003 – 2005 Senior Scientist, BESSY(2) GmbH, Berlin
- 2000 – 2003 Postdoctoral Fellow at the IBM Almaden Research Center in the department for Advanced Recording Media, San Jose, CA, USA
- Juni 2000 PhD in Physik, Dissertation: *Oxidation of Epitaxial Nb(110)Films: Oxygen Dissolution and Oxide Formation*, Ruhr-Universität Bochum, *summa cum laude*, supervisor: Prof. Hartmut Zabel
- Mai 2000 State examination – teaching high school and college level maths, physics and philosophy (Deutsches Staatsexamen, Sek. 2), Ruhr-Universität Bochum, Germany, 2000,
- April 1997 Diploma in Physics, Diplomarbeit: *Strukturelle Untersuchungen zum epitaktischen Wachstum von Pd(111) auf Cr(110)*, Ruhr-Universität Bochum, supervisor: Prof. Hartmut Zabel

### Academic Honors, Scholarships and Grants

- Erasmus scholarship, University of Sussex, Brighton, England (1994-1995, 1 year)
- Scholarship for the 48<sup>th</sup> Nobel Laureate Meeting, Lindau, Germany (1998, 1 week)
- HERCULES course, ILL, ESRF, Grenoble, France (1998, 7 weeks)
- Graduiertenkolleg scholarship, Ruhr-Universität Bochum, Germany (1997-2000) including visiting scientist assignments at the IBM Almaden Research Center (1999, total of 5 months)
- DFG (German National Research Council) research scholarship at the IBM Almaden Research Center (10/2001 – 10/2002) including a seminar series at the universities in Johannesburg, Pretoria and Soweto, South Africa (Nov/Dec 2001, 1 month)
- IEEE travel grant to give talks at NIST Boulder, University of Colorado at Boulder, University of Colorado at Fort Collins and Colorado State University at Colorado Springs (April 2010)
- Hitachi Global Storage Technologies Gold Patent Award (2005, dotiert mit \$ 5000)

### Vorträge, Publikationen und Patente

- 25+ invited conference, symposium and plenary talks, 200+ contributed conference talks
- 120+ publications, 2 book chapters (with Springer)
- Cover articles: IEEE Trans Magn (2013), Appl. Phys. Lett. (2008), Nature (2004)
- 4800+ citations, H-index of 36
- 60+ patents and patent applications published

## ausgewählte Publikationen

### **Tuning the Reversal of Antiferromagnetically Coupled Perpendicularly Magnetized Thin Films**

O. Hellwig, T. L. Kirk, J. B. Kortright, A. Berger, and E. E. Fullerton, *Nature Materials* **2** (2003) 112.

### **Domain Walls in Antiferromagnetically Coupled Multilayer Films**

O. Hellwig, A. Berger and E. E. Fullerton, *Phys. Rev. Lett.* **91** (2003) 197203.

### **Lensless Imaging of Magnetic Nanostructures by X-ray Spectro-Holography**

S. Eisebitt, J. Lüning, W. F. Schlotter, M. Lörger, O. Hellwig, W. Eberhardt and J. Stöhr, *Nature*, **432** (2004) 885.

### **Magnetic Reversal and Domain Structure in Perpendicular AF-Coupled Films**

O. Hellwig, A. Berger and E. E. Fullerton, *J. Magn. Magn. Mater.* **290-291** (2005) 1.

### **Magnetic recording at 1.5 Pb/m<sup>2</sup> using an integrated plasmonic antenna**

B. C. Stipe, T. Strand, C. Poon, H. Balamane, T. Boone, J. Katine, J-L Li, V. Rawat, H. Nemoto, A. Hirotsune, O. Hellwig, R. Ruiz, E. Dobisz, N. Robertson, T. Albrecht, and B. D. Terris, *Nature Photonics* **4** (2010) 484.

### **Bit patterned media based on e-beam directed assembly with narrow magnetic switching field distribution**

O. Hellwig, J. K. Bosworth, E. Dobisz, D. Kercher T. Hauet, G. Zeltzer, J. D. Risner-Jamtgaard, D. Yaney, and R. Ruiz, *Appl. Phys. Lett.*, **96** (2010) 052511.

### **Influence of structural disorder on magnetic domain formation in perpendicular anisotropy thin films**

M. S. Pierce, J. E. Davies, J. J. Turner, K. Chesnel, E. E. Fullerton, J. Nam, R. Hailstone, S. D. Kevan, J. B. Kortright, Kai Liu, L. B. Sorensen, B. R. York, and O. Hellwig, *Phys. Rev. B* **87** (2013) 184428.

### **Optimization of magnetic cluster size and its distributions in advanced perpendicular recording media**

V. Mehta, T. Wang, Y. Ikeda, K. Takano, B. D. Terris, B. Wu, C. Graves, M. Shu, A. Scherz, J. Stöhr, O. Hellwig *Appl. Phys. Lett.* **106** (2015) 202403.

### **Atomic resolution strain analysis in highly textured FePt thin films**

S. Wicht, S. H. Wee, O. Hellwig, V. Mehta, S. Jain, D. Weller, and B. Rellinghaus, *J. Appl. Phys.* **119** (2016) 115301.