CURRICULUM VITAE

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Education: Diplomphysiker (M.S.) University Munich, 1953
Dr.rer.nat. (PhD) in Physics, University Munich, 1955

Career: Research Assistant, Munich University (1955-1958)
Head Crystal Physics Branch, Michelson Laboratory, Naval Weapons Center, China Lake, California (1958-1969)
Full Professor, Director of Physics Institute at the Technical University Clausthal, Germany (1969-1996)
Distinguished Research Professor, Department of Physics and Astronomy, Arizona State University, Tempe, USA (1991- present; part-time till 1996)

Honors and awards: Erwin Mueller Prize, 1985
Gaede Prize (German Vacuum Society), 1988
Elected Member, Goettingen Academy of Sciences, 1989
Fellow, American Physical Society, 1991
Medard W. Welch Award (American Vacuum Society), 1992
Fellow, American Vacuum Society, 1994
Niedersachsenpreis for Science (Germany), 1995
Award of the Japan Society of Promotion of Science's 141st Committee on Microbeam Analysis, 2003
Innovation Award on Synchrotron Radiation BESSY Society, 2004
Davisson-Germer prize of the American Physical Society, 2005

Affiliations: American Physical Society, American Vacuum Society, Materials Research Society, German Electron Microscopy Society

Publications: Author and co-author of 408 papers (among them 80 reviews)

Book: "Electron Diffraction: Theory, Practice and Applications" 1958 (in German)

Research visits: University of Pretoria, Pretoria, South Africa (1978, 1985, 1989, 1994)
NASA Moffet Field, California: annually 1973 to 1985;
Sincrotrone Elettra, Trieste, Italy: annually 1997 – present.

Editorial boards: Surface Science (1985-2000); phys.stat.sol.(a) (1996 - present)

Scientific Advisory Commitees: Member of advisory boards of several periodic international conferences. Surface Science Symposium (1985 – present), LEEM/PEEM Conferences (1998 – present), Organizer of the First international LEEM workshop.

Referee for national and foreign research-supporting organizations:

NSF, DOE, Research Corporation, FWF (Austria), AvH-Stiftung (Germany), NERC (United Kingdom), FOM (Netherlands), GAAV (Czech Republic), UGC, RGC (Hong Kong). Member of International Advisory Committee for Grant-in-Aid Project of the Ministry of Education and Science in Japan

Numerous invited presentations at international conferences.

Teaching at international summer schools and courses

Collaborations (2003-2006):

Arizona State University: David J. Smith, Martha McCarty. **KLA-Tencor, San Jose**: V. Lordi. **HKUST, Hong Kong :** M. S. Altman. **Laboratoire Louis Néel, Grenoble**, **France**: S. Cherifi. **Synchrotron SOLEIL, Paris, France :** R. Belkhou. **Paul Drude Institut, Berlin, Germany:** L. Daeweritz. **BESSY II, Berlin**, **Germany**: Th. Schmidt. **Universität Konstanz, Germany**: M. Kläui. **Forschungszentrum, Jülich, Germany**: R. Hertel. **Marie Curie-Sklodowska University, Lublin, Poland:** M. Jalochowski, R. Zdyb. **University of Tokyo, Japan:** K. Ono. **Electro-Communication University, Osaka, Japan:** T. Yasue, T. Koshikawa. **Syncrotrone ELETTRA, Trieste, Italy**: A.Locatelli, T. Mentes, M. Kiskinova, L. Aballe. **TASC-INFM, Trieste, Italy**: S. Heun.

Publications of E. Bauer 2004 -2006

(R) means review article

386. M. Kläui, C.A.F. Vaz, T.L. Monchesky, J. Unguris, E. Bauer, S. Cherifi, S. Heun, A. Locatelli, L.J. Heyderman, Z. Cui, J.A.C. Bland: *Spin configurations and classification of switching processes in ferromagnetic rings down to sub-100nm dimensions*, J. Magn. Mater. 272-276 (2004) 1631-1636.

387. E. Bauer, *Spin-Polarized Low Energy Electron Microscopy (SPLEEM)*, in: Magnetic Microscopy of Nanostructures, eds H. Hopster and H.P. Oepen (Springer, Berlin, 2004) pp. 111 - 136 **(R)**.

388. M. Kläui, C.A.F. Vaz, W. Wernsdorfer, E. Bauer, S. Cherifi, S. Heun, A. Locatelli, G. Faini, E. Cambril, L.J. Heyderman, J.A.C. Bland, *Domain wall behaviour at constrictions in ferromagnetic ring structures*, Physica B 343 (2004) 343-349.

389. M. Kläui, C.A.F. Vaz, J.A.C. Bland, L.J. Heyderman, F. Nolting, A. Pavlovska, E. Bauer, S. Cherifi, S. Heun and A. Locatelli: *Head-to-head domain wall phase diagram in mesoscopic ring magnets*, Appl. Phys. Lett. 85 (2004) 5637-5639.

390. A. Pavlovska and E. Bauer, *Surface reconstructions in two and three dimensions: In on Si(111)*, Surface and Interface Analysis 37 (2005) 110-114.

391. R. Zdyb, A. Locatelli, S. Heun, S. Cherifi, R. Belkhou and E. Bauer, *Nanomagnetism Studies with Spin-Polarized Low Energy Electron Microscopy and X-ray Magnetic Circular Dichroism Photo Emission Electron Microscopy*, Surface and Interface Analysis 27 (2005) 239-243.

392. R. Zdyb, A. Pavlovska, A. Locatelli, S. Heun, S. Cherifi, R. Belkhou and E. Bauer, *Imaging low-dimensional magnetism with slow electrons*, Appl. Surf. Sci. 249 (2005) 38 – 44.

393. E. Bauer, *Spin-Polarized Low Energy Electron Microscopy*, in: Novel Techniquees for characterizing magnetic materials, ed. Y. Zhu (Kluwer Academic Publ., Boston 2005) pp. 361 - 379 **(R).**

394. S. Cherifi, R. Hertel, J. Kirschner, H. Wang, R. Belkhou, A. Locatelli, S. Heun, A. Pavlovska and E. Bauer: "*Virgin domain structures in mesoscopic Co patterns: Comparison between simulation and experiment*" J. Appl. Phys. 98 (2005) 043901-1 -043901-6.

395. F.Z. Guo, T. Wakita, H. Shimizu, T. Matsushita, T. Yasue, T. Koshikawa, E. Bauer and K. Kobayashi: Introduction of photoemission electron microscopes at SPring-8 for nanotechnology support, J. Phys.: Condensed Matter 17 (2005) S1363-S1370.

396. T. Koshikawa, H.Shimizu, R. Amakawa, T. Ikuta, T. Yasue and E. Bauer: A new aberration correction method for photoemission electron microscopy by means of moving focus, J. Phys.: Condensed Matter 17 (2005) S1371-S1380.

397. E. Bauer: *Microscopy: Low-Energy Electron Microscopy*, in: Encyclopedia of Condensed Matter Physics, edit. by F. Bassani, J. Liedl and P. Wyder (Elsevier, Oxford, 2005) pp. 161 -172 **(R)**

398. L. Däweritz, C. Herrmann, J. Mohanty, T. Hesjedal, and K. H. Ploog; E. Bauer, A. Locatelli, S. Cherifi, R. Belkhou, A. Pavlovska, S. Heun: Tailoring of the structural and magnetic properties of MnAs films grown on GaAs - Strain and annealing effects, J. Vac. Sci. Technol. B 23 (2005) 1759-1768.

399. R. Zdyb, A. Pavlovska, M. Jalochowski and E. Bauer: Self-organized Fe nanostructures on W(110), Surf. Sci. 600 (2006) 1586-1591.

400. E. Bauer: Surface analysis with slow electrons, Microscopy and Microanalysis, 12 (2006) 347-351 **(R)**

401. Ernst Bauer: *LEEM and SPLEEM*, in: Science of Microscopy, edit by P. Hawkes and J. Spence (Kluwer/Springer Academic Publishers, 2006), pp. 606-656.

402. M.Laufenberg, D. Backes, W. Bührer, D. Bedau, M. Kläui, U.Rüdiger, C.A.F. Vaz, C.A.J. Bland, L.J. Heyderman, F. Nolting, S. Cherifi, A. Locatelli, S. Heun and E. Bauer: *Observation of thermally activated domain wall transformations*, Appl. Phys.Lett. 88 (2006) 052507.

403. R. Engel-Herbert, A. Locatelli, S. Cherifi, D.M. Schaadt, J. Mohanty, K.H. Ploog, E. Bauer, R. Belkhou, S. Heun, A. Pavlovska, T. Leo and T. Hesjedal: *Investigation of magnetically coupled ferromagnetic stripe arrays*, Appl. Phys. A 84 (2006) 231-236.

404. M. Kläui, U. Rüdiger, C.A. F. Vaz, J.A.C. Bland, S. Cherifi, A. Locatelli, S. Heun, A. Pavlovska, E. Bauer and L.J. Heyderman: *Magnetic states in wide annular structures*, J. Appl. Phys. 99 (2006) 08G308.

405. E. Bauer, R. Belkhou, S. Cherifi, R. Hertel, S. Heun, A. Locatelli, A. Pavlovska, R. Zdyb, N. Agarwal and H. Wang: *Microscopy of mesoscopic ferromagnetic systems with slow electrons*, Surface and Interface Analysis, 38 (2006) 1622-1627.

406. A. Locatelli, L. Aballe, T.O. Mentes, M. Kiskinova and E. Baue*r: Photoemission electron microscopy with chemical sensitivity: SPELEEM methods and applications*, Surface and Interface Analysis, 38 (2006) 1554-1557.

407. E. Bauer: *Spin-polarized low energy electron microscopy*, in: The Handbook of Magnetism and Advanced Magnetic Materials, edit. by H. Kronmueller and S. Parkin (John Wiley & Sons, Chichester) Vol. 3, in print. **(R)**