

Dr. Arne Lüker (Ph.D., Dipl.-Ing.)

Neuenfelder Straße 8 ▪ 32361 Preußisch Oldendorf ▪ Germany

LinkedIn-ID: 17133753

Email: arne@arne-lueker.dewww.arne-lueker.dePersonal Details:

Date of birth: 04.05.1975
 Place of birth: Bremen
 Citizenship: EU-German
 Marital status: single

Additional Qualifications:

1994 – 1995 Camphill-Rudolf Steiner-School,
 Aberdeen/Scotland
Supervisor of children with special needs
 Certificate of Completion,
 Practice in Integrated Therapeutic Communities

Work Experience:

2014 – 2015 Experienced Researcher at the National Institute of Research
 & Development for Technical Physics, Iași, România
*Development of sensing applications for biomedicine using
 magnetic nanomaterials and nanostructured materials*

2010 – 2011 Postdoc at the Instituto Superior Técnico, Departamento de
 Física, Lisbon/Portugal
Realisation of Pb-free Ferroelectrics and Multiferroics

2008 Research Assistant, Cranfield University/England
Characterisation of Ni/Ti-SMA Alloys

2006 – 2007 Marie Curie Fellow at IMEC,
 Leuven/Belgium
Sputter deposition of AlN

2004 – 2005 Project Engineer, Research Center Karlsruhe/Germany
Development of MEMS for space science applications

1996 – 2002 Technik & Design, Lübbecke/Germany
Independent draftsman

Education and Studies:

2005 – 2009 Ph.D Student, Cranfield University/England
Material Science and Nanotechnology
*Thesis: Sol-Gel derived Ferroelectric Thin Films for Voltage
 Tunable Applications*

1999 – 2004 University of Applied Sciences Münster/Germany
Engineering Physics, major Micro-Engineering
*Thesis: Sub-Micron 100 keV E-Beam Lithography for Self
 Supporting Metallic High Aspect Ratio Structures Electroplated
 Directly onto Silicon*

1995 – 1998 Carl-Severing-Schools Bielefeld/Germany
*Polytechnic qualification as a professionally recognised
 Physical-Technical Assistant*

1989 – 1994 Waldorf School Evinghausen/Germany

Memberships:

Since 2013 Johanniter-Unfall-Hilfe, engl.: »St. John Accident Assistance«
 2005 – 2008 Cranfield University Walking Club

Scientific Publications:

1. Arne Lüker, »Konzeption und Herstellung dicker kapazitiver Resonant Meshes zur experimentellen Überprüfung simulierter Untersuchungen im fernen Infrarot« Forschungszentrum Karlsruhe, Forschungsbericht 02-037W-00B, 2002
2. A. Lüker, O. Sternberg, H. Hein, J. Schulz, K.D. Möller; „Thick capacitive meshes on polyimide substrates”, *Infrared Physics & Technology*, **45**, 2, 153, 2004
3. J. Kusterer, A. Lüker, Y. Men, W. Ebert, P. Kirby, M. O’Keefe, E. Kohn; „Pb(Zr,Ti)O₃ on CVD Diamond – A New Material System for MEMS Actuators”, Diamond 2006, Estoril (PT), September 2006
4. J. Kusterer, A. Lüker, W. Ebert, Q. Zhang, P.B.Kirby, E. Kohn; „ Piezo-actuated Nanodiamond Cantilever Technology for High Speed Applications”, Diamond 2007, Berlin (DE), September 2007
5. J. Kusterer, E. Kohn, A.Lüker, P.B. Kirby, M.F. O’Keefe; „Diamond high speed and high Power MEMS switches”, 4th EMRS DTC Technical Conference – Edinburgh 2007
6. T. Riekkinen, T. Mattila, S. van Dijken, A. Lüker, Q. Zhang, P.B. Kirby, A.M. Sánchez; “Ferroelectric parallel-plate capacitors with copper electrodes for high-frequency applications”, *Appl. Phys. Lett.* **91**, 252902, 2007
7. A. Lüker, H. Hein, J. Schulz, N. Dambrowsky, O. Sternberg, M.J.Sweetgall, K. Abdijalilov, K.D. Möller, H. Grebel; “Band pass filters in the 1 µm spectral region: Thick metal screens”, *Infrared Physics & Technology*, **51**, 3, 178, 2008
8. J. Kusterer, A. Lüker, P. Herfurth, Y. Men, W. Ebert, P. Kirby, M. O’Keefe, E. Kohn; „Piezo-actuated Nanodiamond Cantilever Technology for High Speed Applications” *Diamond and Related Materials*, **17**, 7-10, 1429, 2008
9. Y-H-. Chun, C. Fragkiadakis, P. Bao, A. Lüker, R.V. Wright, J-S. Hong, P.B. Kirby, Q. Zhang, T.J. Jackson, M.J. Lancaster, “Tunable Bandstop Resonators and Filter on Si-Substrate with PST Thin Film by Sol-Gel Deposition”, 38th European Microwave Conference, EuMC2008.
10. C. Fragkiadakis, A. Lüker, R.V. Wright, L. Floyd, and P.B. Kirby; “Growth and high frequency characterization of Mn doped sol-gel Pb_xSr_{1-x}TiO₃ for frequency agile applications” *Journal of Applied Physics* **105**, 1 (2009)
11. D. Bhattacharyya, A. Lüker, Q. Zhang and P.B. Kirby, ”Structural evaluation of sol-gel derived lead strontium titanate diffusion barrier for integration in PZT transducer design”, *Thin Solid Films*, **518**, 12, 3382 (2010)
12. A. Lüker, Q. Zhang, and P.B. Kirby, “Study of compositional change in the interfacial regions between lead strontium titanate (PST)/SiO₂ and lead zirconate titanate (PZT)/SiO₂ by Auger Emission Spectroscopy”, *Thin Solid Films*, **518**, 14, 3763 (2010)

Books:

Arne Lüker: Sol-Gel derived Ferroelectric Thin Films for Voltage Tunable Applications, ISBN 978-3-639-31446-5, VDM Publishing House Ltd., (2010)

Arne Lüker: »Der tote Student« crime novel, 422 pages; ISBN: 978-3850407793, Vindobona-Verlag, Mai 2012

Book chapters:

Arne Lüker, Qi Zhang, Paul B. Kirby: The Effect of Mn Doping on the Dielectric Properties of Lead Strontium Titanate (PST), »Ferroelectrics« (ISBN 978-953-307-557-0), InTech - Open Access Publisher, edited by Dr. Mickaël Lallart, University of Lyon, Lyon, France (2011)

Awards:

1. »Best Poster Award«:
J. Kusterer, A. Lüker, Y. Men, W. Ebert, P. Kirby, M. O'Keefe, E. Kohn; „Pb(Zr,Ti)O₃ on CVD Diamond – A New Material System for MEMS Actuators”, Diamond 2006, Estoril (PT), September 2006

Selected articles from www.arne-lueker.de:

1. [The Quest for Pb-free piezoelectrics and ferroelectrics - a review](#)
A review on lead-free piezoelectric materials [English]
2. [Understanding magnetic nanoparticles](#)
The physics of magnetic nanoparticles including notes from my lab-book [English]
3. [Cornu's Spiral](#)
The magic of Fresnel's Diffraction patterns and the History of Cornu's Spiral [English]
4. [Mendeleev's Periodic Table](#)
The magic of russian order in chemistry [English]
5. [Logarithmen für alle!](#)
Die Geschichte und die Geheimnisse der Logarithmen [German]
6. [Das Widukind-Projekt](#)
Widukind: Sein Leben und seine Mythen [German]
7. [Dimostrazioni armoniche - Der Weg zum Mittelton](#)
Die Geschichte und die Geheimnisse des Quintenzirkels [German]
8. [The Enigma-Emulator](#)
A perfect working Enigma-Emulator (JavaScript) [German]