



Prof. Dr. Jo Verbeeck

Personal Data & Academic Degrees

- Place & date of birth: Bonheiden (Belgium), 11-7-1972
- Industrial Engineer electronics and telecommunication
- Ph.D. Physics: 27.06.2002 (University of Antwerp) "Electron energy loss spectroscopy of nanoscale materials"

Scientific Career

- 1998-2002: Ph.D. Researcher at the University of Antwerp (IUAP 4/10)
- 2001: visiting student at Cornell University (USA)
- 2002-2012: Postdoc Researcher at the University of Antwerp
- 2006-2007: visiting scientist at the TU Vienna (Austria)
- 2011 ERC starting grant winner VORTEX: 'Exploring electron vortices'
- Ernst Ruska Prize winner 2011 for the work on 'EELS quantification and electron vortex beams'
- 2013: Full Professor

Scientific Activities

- Over 90 publications in international journals with referee system
- Invited speaker at numerous international conferences
- Over 700 citations
- Author of the [EELSMODEL](#) program to quantify EELS spectra
- Participant in different national and international projects, among which
 - GOA (UA): Xanes meets ELNES
 - IFOX (EU, FP7): '[Interfacing oxides](#)'
 - ERC starting grant (EU, FP7): VORTEX exploring electron vortex beams
 - FWO (Flanders): Metal based nucleation layers for the growth of nanocrystalline diamond

Main Topics of Interest

- Electron vortices and topological effects in the TEM
- Coherence issues in inelastic scattering
- Inelastic image simulation for STEM EELS and EFTEM
- Electronic structure mapping at atomic resolution
- Magnetic mapping at atomic resolution
- Complex oxide materials
- Magnetic materials
- Diamond and related materials

- Quantitative EELS on the nanoscale (see [EELSMODEL](#) page)

Key publications

Ein Whirlpool aus Elektronen : Transmissions-Elektronenmikroskopie mit Elektronenwirbeln

Schattschneider Peter Schachinger Thomas Verbeeck Johan

Physik in unserer Zeit - ISSN 1521-3943-49:1 (2018) p. 22-28

Epitaxial stress-free growth of high crystallinity ferroelectric $\text{PbZr}_{0.52}\text{Ti}_{0.48}\text{O}_3$ on GaN/AlGaN/Si(111) substrate

Li Lin Liao Zhaoliang Gauquelin Nicolas Minh Duc Nguyen Hueting Raymond J. E. Gravesteijn Dirk J. Lobato Hoyos Ivan Pedro Houwman Evert P. Lazar Sorin Verbeeck Johan Koster Gertjan Rijnders Guus

Advanced Materials Interfaces - ISSN 2196-7350-5:2 (2018)

Efficient creation of electron vortex beams for high resolution STEM imaging

Béché Armand Juchtmans Roeland Verbeeck Johan

Ultramicroscopy - ISSN 0304-3991-178 (2017) p. 12-19

Measurement of atomic electric fields and charge densities from average momentum transfers using scanning transmission electron microscopy

Müller-Caspary Knut Krause Florian F. Grieb Tim Loffler Stefan Schowalter Marco Béché Armand Galioit Vincent Marquardt Dennis Zweck Josef Schattschneider Peter Verbeeck Johan Rosenauer Andreas

Ultramicroscopy - ISSN 0304-3991-178 (2017) p. 62-80

Locating light and heavy atomic column positions with picometer precision using ISTEM

Van den Bos Karel Krause F.F. Béché Armand Verbeeck Johan Rosenauer A. Van Aert Sandra

Ultramicroscopy - ISSN 0304-3991-172 (2017) p. 75-81