

Curriculum Vitae

Mailing Address

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Related Skills

- In-depth experience in project management, funding acquisition and directing research projects.
- Experience in the processing of primary and secondary raw materials, waste management, and mining technology since 1992.
- Expert in critical metals and its relation to mobility and renewable energies.
- Expert in substitute fuel, plastics recycling and municipal solid waste management.
- Advanced knowledge in material characterisation and sustainable secondary resource management.
- Advanced knowledge in material flows in wind energy plants and Photovoltaics.
- More than five years involvement in climate change projects (Life Cycle Assessment) and research on renewable energy, mainly biomass.
- More than 15 years experience in applying for external funding (industry and government).
- Extensive participation in German net-working groups that encourage women to study an engineering discipline
- Excellent knowledge in scrap tire recycling; completion of a report on the subject for Natural Resources Canada (MTL) in 2005.
- Over 10 years of experience in risk assessment.
- Knowledge of energy management, quality management (QM), Hazard Analysis, Critical Control Point (HACCP) and Good Manufacturing Practices (GMP).
- 15 years of experience teaching environmental and technical courses at Aachen, Bremen and Oldenburg University (undergraduate and graduate students).

Education

- June 2007 Further education in quality management (TUEV certificate)
- June 2002-Present Health and Safety Engineer (Deutsche Steinkohle Saar)
- May 2002 Dr.-Ing. (doctorate), Faculty of Mining Engineering, RWTH Aachen University, Germany
 Dissertation: “Untersuchungen zur Probenahme von Siedlungsabfällen mit Hilfe eines neuen Probenahmemodells“ (Magna cum Laude)
 “Investigation of municipal waste and development of a new sampling model”
 Supervisor: Prof. Dr.-Ing. Thomas Pretz, Chair of Processing and Recycling of Solid Waste Material
- December 1997 Dipl.-Ing. (comparable to a North American Master’s degree), Faculty of Mining Engineering, RWTH Aachen University, Germany
 Thesis: “Secondary Lead Smelting and Treatment of Soda Slag at Fry’s Metals”, performed in South Africa (University of Cape Town)
 Supervisor: Prof. Dr.-Ing. Heinz Hoberg, Chair of Mineral Processing
- June 1991 Abitur (university-entrance diploma), Luise von Duesberg Gymnasium, Kempen, Germany

Research Work Experience

- November 2016 – Oktober 2019 BMWi research grant for “Total Energy Management for Professional Data Centers“ (TEMPRO) at **Oldenburg University**, Germany
<http://www.tempro.uni-oldenburg.de/>
- Since March 2014 to present Leader of the new research group “Cascade Use” at **Oldenburg University**, Germany. (www.uni-oldenburg.de/cascadeuse)
 Establishing a new research group with 4 researchers in an interdisciplinary context on international level. Topic: “Contribution of material cascade utilization to sustainable resource management – case study car recycling”
 Working with LCA Software GaBi and Material Flow software STAN

August 2012 to
April 2014

Leader of a research group at **Oldenburg University**, Centre for environment and sustainability, Germany. (www.coast.uni-oldenburg.de)

Responsible for 3 subprojects in the GroenGas Project on biogas processing in Germany and the Netherlands.

(<http://www.groengasproject.eu/Home.html#!id=pages/Home>)

Involved in a study for the German Federal Environment Agency on critical metals (2012-2014).

Involved in product cascade using and material efficient usage (main focus: rotor blades form wind turbines and car parts from scrap cars).

June 2007 to July
2012

Leader of a research group at **Bremen University**, Institute for Integrated Product Development, Germany. (www.bik.uni-bremen.de)

Project leader of FU²-Experte: a project on the energy efficiency in feed production (www.fu2-experte.de).

Conducted research on Life Cycle Assessment related to solid waste processes and defining parameters in the scrap tire process.

Investigated the influence of various recycling technologies on the environment (sustainability of secondary resources) and modelling processes.

Involved in Material Flow Assessment and Life Cycle Assessment (software UMBERTO).

March 2004 –
December 2005

Post-doctoral research scientist at **Natural Resources Canada, MTL** Ottawa, in cooperation with RWTH Aachen University.

Carried out a research project on scrap tire recycling; focused on material characterisation and environmental issues related to recycling technologies. Contacted and visited Canadian recyclers.

Conducted research on Life Cycle Assessment (LCA), with a special focus on climate change (greenhouse gas) related to tires in Canada.

March 2003 –
February 2006

Post-doctoral fellow (funded by the Lise Meitner Award) at the Chair of Processing and Recycling of Solid Waste Material, **RWTH Aachen University**, Germany (<http://www.iar.rwth-aachen.de>)

Developed knowledge of quality management (ISO 9000 and ISO 14000) in environmental processes.

Investigated the potential of waste streams to become a source of substitute fuel.

- January 1998 – December 2002 Research Staff at the Chair of Processing and Recycling of Solid Waste Material, **RWTH Aachen University**, Germany.
- Conducted research on the recycling of solid waste materials.
- Conducted research on waste materials as a source for the generation of energy derived from biomass and biogas.
- Compiled a report on the University's entire waste management system.
- Acted as technical advisor for the waste management project in Cotonou, Benin, Africa, in collaboration with the "Deutsche Gesellschaft fuer technische Zusammenarbeit" (GTZ).
- January 1998 – February 2000 Supervised a recycling pilot plant for packaging waste material in cooperation with "Der gruene Punkt" (<http://www.gruener-punkt.de/?L=1>).
- April 1997 – August 1997 Research Fellow at the **University of Cape Town**, South Africa, Department of Chemical Engineering.
Secondary Lead Smelting and Treatment of Soda Slag at Fry's Metals.
- April 1994 – March 1997 Student Assistant at the Chair of Mineral Processing, **RWTH Aachen University**, Germany.
- March 1995 Exchange Student at **China University of Mining** in Beijing, VR China (topic: research on coal).

Industry Work Experience

- From Oct 2015 Founder and Head of the Steinbeis Center "Resource", an engineering office for industrial related projects on energy and material efficiency
<http://www.steinbeis.de/en/experts/steinbeis-enterprises-and-partners.html>
- February 2007 to November 2009 Research Assistant at the **International Research Association of Feed Technology**, Brunswick, Germany. (http://www.iff-braunschweig.de/index_e.php)
- Conducted research on biomass as a source for renewable energy and assessed energy efficiency within the animal food processing industry.
- Worked as quality manager and performed internal audits
- Involved in quality management, Hazard Analysis and Critical Control Point (HACCP) and Good Manufacturing Practices (GMP).
- October 2000 – December 2002 Participated in a working group of the **DIN** (Deutsches Institut fuer Normung, Berlin) as expert in sampling technology, elaboration of guidelines for sampling methods.

July 1995 – August 1995 Practical Trainee at **Minenco Pty Limited**, Sydney, Australia (topic: bioremediation of soils).

Research Grants / Awards

- November 2016 – Oktober 2019 BMWi research grant for “Total Energy Management for Professional Data Centers“ (TEMPRO), **Grant value: 2.2 Mio Euro**
- November 2016 Study programme PPRE "Postgraduate Programme Renewable Energies" was awarded with the prestigious German price "Ars Legendi" (Dr. Pehlken is part of the lecturer team) **Grant value: 50.000 Euro**
- March 2014 – February 2018 BMBF research grant for establishing a new young research group at Oldenburg University (Group: Cascade Use). **Grant value: 1.4 Mio Euro**
- August 2011 – February 2015 BMWi research grant for the feed compound processing project “Fu2-Experte” at Bremen University. **Grant value: 1.3 Mio Euro**
- May 2012 – June 2014 Associated Juniorfellow of the Hanse Institute for Advanced Study (Hanse-Wissenschaftskolleg).
This award is given to young researchers to support own networking projects. Workshop funding approx. **10.000 Euro**
- June 2007 – May 2009 and December 2009- November 2010 Research grant for own position from the German Research Foundation (DFG, Deutsche Forschungsgemeinschaft) at Bremen University. **Grant value: 180.000 Euro**
- March 2003 – February 2006 Lise Meitner Award, Ministerium fuer Wissenschaft und Forschung des Landes Nordrhein-Westfalen, Germany.
This award is given to female post doctoral students who have recently graduated with superior research skills, in order to increase the number of female professors at universities. **Grant value 80.000 Euro**

Teaching Experience

- Since April 2014 Lecturer at Oldenburg University in Biomass for graduate students (40 students each semester) in the study programme Postgraduate Programme Renewable Energy (PPRE), Engineering Physics and Sustainable Economics and Management
- Since April 2013 Lecturer at Oldenburg University in Biomass for graduate students (20 students each semester) in the study programme Sustainable Economics and Management and Water and Coastal Management
- Since August 2011 Lecturer and active member of Summer school for female engineers at Bremen University. Various courses each summer in sustainable resource management and energy management (10 students each course)
- December 2009 - Lecturer at Bremen University in Technical Design in the undergraduate
July 2012 and study programme production engineering.
April 2006 – March Taught courses with up to 250 Undergraduates. (<http://www.bik.uni-bremen.de>)
2007
- January 1998 – Taught and mentored graduate and undergraduate students (20 students each
December 2002 semester) in the following subject areas: processing and recycling of solid
waste materials, and health and safety issues in engineering processes.

Affiliations

- Since July 2015 Member of the board of directors in the Oldenburg Centre for
Sustainability Economics and Management (CENTOS), <http://www.uni-oldenburg.de/en/centos/>
- Since April 2015 German Delegate of the COST Action European network for innovative
recovery strategies of rare earth and other critical metals from electric and
electronic waste (ReCrew),
http://www.cost.eu/COST_Actions/essem/ES1407?management
- Since 2013 Speaker and Co-Founder of the Working Group “Material and Energy
Flows” in the North West Region of Germany (www.stoffstrom-nordwest.de) and member of the German Industrial Ecology Network
(www.industrialecology.de)
- Since 2009 Member of the “Deutscher Hochschulverband” (German Association of
University Professors and Lecturers).
- Since 2011 Member of the “Gesellschaft für Informatik” (German Informatics Society).

Reviewer Experience

Guest Editor of the Journal of Life Cycle Assessment for the Special Issue “Electric Vehicles” in 2015

Outstanding reviewer for Elsevier – Journal of Cleaner Production in 2016

Performed reviews for the DAAD Germany (German Academic Exchange Service) in 2011 in Mexico

Since 2011 Reviewer for the conferences ICE, ECOS 2012, ITEE and EnviroInfo

Reviewed articles for Routledge (Taylor and Francis Group) and WIT Press (Wessex Institute of Technology) and Springer (Journal of LCA) and Elsevier and MDPI, Switzerland.

External reviewer for the Alexander von Humboldt Foundation in 2013/14, Co-organizer of the Indian-German Humboldt network INDOGFOE in 2014

Native language is German, fluent in English, basic knowledge in French and basic knowledge in Spanish.

Additional Information

Since 2011 member of organizing committee for the international summer engineering school for female engineers at Bremen University, <https://www.ingenieurinnen-sommeruni.de/en/index.html>

Organiser of the conferences “Sustainable Material Life Cycles in Wind Energy” in 2012 in Delmenhorst at the HWK (www.h-w-k.de) and “Electro mobility- Shift of Energy Burden” in 2014 and in 2015.

Native language is German, fluent in English, basic knowledge in French and basic knowledge in Spanish.

Playing French Horn in the Brass Band “Brass Sax” in Petersfehn (<http://www.brass-sax.de/>)

Currently tutoring 3 phd students. In addition, I tutored more than 50 master and bachelor thesis.