



Dr. Sigrid Kusch-Brandt

Environmental Resources, Circular Economy and Waste Management, Bioeconomy, Sustainable Consumption and Production, Food Systems, Renewable Resources

Advancing towards more sustainable futures

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Thematic Competence Profile

Background and practice of my research, consulting and teaching are based in the environmental engineering discipline, and include interdisciplinary and transdisciplinary components. Key focus areas cover:

- Resource management, circular economy, renewable resources, renewable energy, resource efficiency, cleaner production, waste management, solid waste, organic wastes, e-waste
- Bioeconomy, biological process engineering, anaerobic digestion (biogas)
- Sustainable consumption and production, cleaner production, hydrogen
- Organic resources, food waste, sustainable food systems
- Interconnections of urban and rural areas, energy in urban environments, integration of underutilised biogenic energy carriers (bio-waste, zoo waste, horse manure, other lignocellulosic materials)

Formal Higher Education:

Diploma	Environmental Engineering (Dipl.-Ing., specialised in waste management, circular economy, process engineering), completed 2001 – German equivalent to M. Sc. degree
PhD	Doctoral degree completed 2007 (subject field: agricultural sciences, biomass and biowaste valorisation, anaerobic digestion; laboratory and applied research)
Further degree	Sociologist (B.A. Political Sciences, Public Administration, Sociology), completed in 2022 (specialised in social innovation)

Relevant Professional Positions, Training and Recognition

Resource management in practice, research, academic teaching: current positions

2021 ongoing	Project leader bioeconomy, hydrogen; Alb-Donau-Kreis District Administration, Ulm, Germany
2020 ongoing	Lecturer “Circular Economy and Sustainable Management of Resources”, University of Applied Sciences, Ulm, Germany
2009 ongoing	Visiting Researcher/ Visiting Research Fellow at University of Southampton (UK), Engineering and the Environment, member of the Bioenergy and Organic Resources Research Group
2008 ongoing	Consultant and Freelance Environmental Engineer (founder of start-up), Independent Scientist (currently in Ulm/ Germany, previously Nuernberg, Wuerzburg) (circular economy, waste management, renewable resources, anaerobic digestion)

Earlier appointments to professorships

2016 – 2020	Visiting Professor for ‘Sustainable and Renewable Resources’, University of Padua (Italy), Department for Civil, Environmental and Architectural Engineering (temp.)
2014 – 2016	Contract Professor for ‘Sustainable and Renewable Resources’, University of Padua, Italy
2011 – 2012	Substitute (Interim) Professor for Waste Management at Technical University of Dresden, Germany (temporary placement for 2 semesters with full teaching, examination, leadership responsibilities in the area of waste and resources management); Head of the Chair for Waste Management; Deputy Director of the Institute for Waste Management and Contaminated Site Treatment

Consultancy at science/policy interface

2021 – 2022	UNECE-Consultant (United Nations Economic Commission for Europe); elaboration of “Europe’s Environment - The Seventh Pan-European Environmental Assessment” (UNECE, UNEP)
2015 – 2016	Coordinating Lead Author (leadership for theme waste) of the European Assessment of the Global Environmental Outlook Report of the United Nations Environment Programme (UNEP GEO 6)
2015 – 2016	Contributing expert to the UN Global Sustainable Development Report 2016 (GSDR 2016, UN Division for Sustainable Development)

Research positions

2008 – 2012	Academic Associate at University of Stuttgart (waste management, organic resources) (since 2010 partial and since 2011 primarily faculty position; since 2010 establishment and leadership of a research group based on new research areas brought to the faculty, such as zoo waste, micro gas grids, horse manure, urban bioenergy; granted leave for one year in 2011/12 to assume position in Dresden)
2003 – 2007	Doctoral student with University of Hohenheim, Stuttgart (research in bioenergy)
2003 – 2006	Researcher at State Institute for Agricultural Engineering and Bioenergy, Stuttgart (applied and laboratory research, anaerobic digestion, conception of a dry digestion laboratory; consulting)
2002	Research at EAWAG in Duebendorf, Switzerland (ecological sanitation)
2001 – 2002	Research Assistant at University of Stuttgart (sanitary engineering)
1998 – 2000	Research Assistant at University of Stuttgart (industrial water technology)

Other positions/appointments (selection)

2012 ongoing	Expert evaluator and rapporteur for various national, European and international organisations in the areas of circular economy, bioeconomy, environmental engineering, environmental sciences, waste management, innovation, renewable resources, renewable energy
2022	Monitor for the implementation of a Horizon 2020 project, on behalf of the European Commission
2021 – 2022	Member of the Engineering Panel of the Polish Academy of Sciences for the implementation of the PASIFIC programme
2015 – 2019	Member of the British Council Panel ‘Environment, Agriculture and Food Sciences’; Institutional and Researcher Links/ Newton Fund assessment groups
2011 – 2012	Member of Expert Panel 3rd ERA-IB Joint Call 2012 (European Research Area Industrial Biotechnology, EU panel with 11 experts)
2014 ongoing	Founder of ‘ScEnSers Independent Expertise – Science and Engineering for Sustainable Environmental Resources’ (non-commercial organisation, think tank)
2015 ongoing	Future Earth Fellow (ISSC - International Social Science Council/ ICSU – International Council for Science/ Future Earth)
2011 – 2014	Appointed as ZIF Young Fellow (Centre for Interdisciplinary Research, Bielefeld)
2007	Intellectual Property Manager at Technical University of Munich; responsible for intellectual property issues for several engineering faculties
2003	Freelance work for a waste specialist journal (RecyclingMagazin) in Munich
2000	Temporary placement with Park Environmental Services in Newport/ UK (waste treatment)
1994 – 2001	Studies in Environmental Engineering; Technical University of Berlin, University of Stuttgart, ENTPE France, Technical University of Dresden

Editor, Member of Editorial Boards (selection)

Editor Journal	Associate Editor “Waste Management & Research: The Journal for a Sustainable Circular Economy (WM&R)” (Sage Journals, since 2022) Section Editor ‘Environmental Science’ for Science Progress (Sage Journals, since 2019)
Editor Books	Associate Editor “Implementing the UN Sustainable Development Goals – Regional Perspectives”, Vol. 4: European Region (since 2021; Springer, World Sustainability Series) Associate Editor book project “Handbook of Nature-based Solutions to Mitigation and Adaptation to Climate Change” (since 2022; Springer, World Sustainability Series)
Editorial Board	Member of the journal “International Journal of Environmental Research and Public Health” (since 2021) Editorial Board Member ‘MDPI Books’ (since 2021) Editorial Board Member journal ‘Discover Sustainability’ (Springer Nature, since 2020) Editorial Board Member journal ‘Waste Management & Research’ (2016 – 2021) Member of Editorial Board journal ‘News in Engineering (NiE)’ (2013 – 2018)
Guest Editor	Guest Editor International Journal of Environmental Research and Public Health (Special Issue ‘Towards more Sustainable Food Systems, 2nd Edition’, since 2021) Guest Editor journal ‘Processes’ (Special Issue ‘New Frontiers in Anaerobic Digestion (AD) Processes’, since 2020) Guest Editor International Journal of Environmental Research and Public Health (Special Issue ‘Towards more Sustainable Food Systems’, 2018 – 2020) Guest Editor Resources (Special Issue ‘Underutilised Resources in Urban Environments’, 2018 – 2020) Guest Editor Engineering in Life Sciences (Special Issue ‘Progress in Biogas’, 2011 – 2012) Guest Editor International Journal of Environmental Engineering (Special Issue ‘Progress in Landfill Management and Landfill Emission Reduction’, 2009 – 2011)

Selected Specific Activities

Journal Referee	ca. 350 completed reviews (rereviews not counted) (total number of enquiries: ca. 1,010) review mainly for: Waste Management & Research; Waste Management; Applied Energy; Chemical Engineering Journal; Journal of the Air & Waste Management Association; Bioresource Technology; Journal of Cleaner Production; Biological Engineering Transactions; Engineering in Life Sciences; Water Research; Journal of Industrial Ecology; Water, Air, and Soil Pollution; Chemie Ingenieur Technik; Environmental Engineering and Management Journal; Environmental Technology; Critical Reviews in Biotechnology; World Review of Science, Technology and Sustainable Development; Energies; Sustainability; Processes; International Journal of Environmental Research and Public Health; Chemical Engineering Journal
Reviewer Proposals	ca. 310 completed evaluations of project proposals (ca. 290 research projects, 10 workshops, 10 PhD placements + others), various funding programmes (EU, pan-Europe, Germany, Romania, Poland, Qatar, Denmark, UK, Latvia, Cyprus, LIRA 2030 Africa)
Conference Reviews	Referee for conference submissions to various conferences (14 completed reviews)

- Committees/ Panels President of the Committee of the course ‘Sustainable and Renewable Resources’ at University of Padua, Environmental Engineering degree (2014 – 2020)
 Expert reviewer for IPCC Special Reports (1.5°C Global Warming, Climate Change and Land) (2017, 2018, 2019)
 Expert reviewer for the REN21 Renewables Global Status Report (Renewable Energy Policy Network for the 21st Century) (2017, 2018, 2019, 2020)
 Member expert panel for technology assessments for TEL (Technology Exchange Lab) (non-profit organisation) (2017)
 Consultative expert reviewer for ICSU (International Council for Science) on the framework for understanding SDG interactions (2016)
 Consultative expert reviewer for IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services) (2016, 2017, 2018)
 Member of the Engineering Panel of the Polish Academy of Sciences for the implementation of the PASIFIC programme (2021 – 2022; international expert panel with ca. 8 members)
 Panel member ‘Environment, Agriculture and Food Sciences’ for the British Council Researcher Links programme/ Newton Fund (2015 – 2019)
 Member of the EPSRC Associate Peer Review College (Engineering and Physical Sciences Research Council, UK; since 2016)
 Rapporteur EU Horizon 2020 (topical area waste, one- and two-stage calls, 5 panels since 2014)
 Rapporteur UEFISCDI Romania (since 2016, 6 calls)
 Member of Expert Panel 3rd ERA-IB Joint Call 2012 (Industrial Biotechnology, 2011 – 2012)
 Member of the Committee Hydro Sciences of the TU Dresden (2012)
 Judge for the Pan-African Awards for Entrepreneurship in Education (run by Teach a Man to Fish, 2017, 2018, 2019)
 Contest Judge for the ‘Global School Enterprise Challenge’ (run by Teach a Man to Fish, student led school businesses, 2 assessment rounds of final results in 2015, 2016)
 Judge for business plans in the ‘Global School Enterprise Challenge’ (2016)
 Contest Judge ‘Future City Competition’ US National Finals 2015/16 (STEM programme for school students run by the US National Engineers Week Foundation, focal topic in 2015/16: waste management)
 Chairperson at several congresses (since 2009)
 Member of scientific/ organising committee of several congresses and other scientific/ public events (ca. 12 events)
- Distinctions/ Prizes Publons Top Reviewer (2017, 2018, 2019; multiple award: winner in up to 8 categories)
 SAGE Excellent Reviewer 2015 (voted by editorial board of Waste Management & Research)
 Best Reviewer Award Journal of the Air & Waste Management Association (2013)
 Appointed participant for the Young Scientists’ DFG/ISSC/ICSU Conference on Integrated Science for the Future Earth theme ‘Food Futures’, Villa Vigoni, Italy (2013)
 Ranked among final top 40 high-potentials for the Fast Track Programme of the Robert Bosch Stiftung, Stuttgart, aiming at accelerated uptake of leadership positions (2012)
 Nominee for the postdoctoral programme ‘Eliteprogramm für Postdoktoranden der Baden-Wuerttemberg Stiftung’ based on conception of a research line newly brought to the faculty on urban bioenergy (zoo waste, micro gas grids, horse manure, biowaste) (2010)
 Listed 2nd by BTU Cottbus (Brandenburgische Technische Universität, Germany) for the appointment of a junior professor for the area ‘Waste Management and Bioenergy’ (2009/2010)
 Recipient of several travelling scholarships
 Nominee for the UNV Online Volunteering Award 2015 (nominated by Art for All in the World together with the team I was leading)
 Recipient of Scheffel-Prize of Literarische Gesellschaft Karlsruhe (literary community in Southern Germany) (1993)
- Others Member of several professional affiliations (academic and engineering)
 STEM-Mentor (science, technology, engineering, mathematics) for grammar school girls (project Cybermentor, University of Regensburg, 2010 – 2012)
 Co-organiser of an institutional ‘girl’s day’ (one-day programme with technical/ scientific topics for grammar school girls, University of Hohenheim, 2005)
 Further activities as mentor or in similar positions
 Several years of voluntary private tutoring for grammar school children with background of migration