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Biological Waste treatment and recycling



Professor Dr.-Ing. Martin KranertBorn in Stuttgart 1955

Education

1975-1981 University of Stuttgart, studies of civil engineering, degree: Dipl.-Ing.

Diploma Thesis: "Bestimmung der spezifischen Wärmekapazität von Müll

(Determination of the specific heat capacity of waste)"

1988 Doctoral Degree in civil engineering (Dr.-Ing.), University of Stuttgart

Doctoral Thesis: "Freisetzung und Nutzung thermischer Energie bei der Schlammkompostierung (Release and use of thermal energy during sludge

composting)"

Professional career:

1981 - 1984: Scientific Assistant

University of Stuttgart, Institute for Sanitary Engineering, Water Quality and Solid Waste Management (ISWA), Chair of solid waste management (Prof. Tabasaran). Research in composting, modelling of solid waste management systems, solid waste management concepts, analyses of waste composition, waste analytics. Lectures and exercises in the field of solid waste management.

1984 - 1993: Project Manager and General Manager

Consultant and Engineering Company for Waste (Ingenieursozietaet Abfall, Prof. Tabasaran & Partner) Stuttgart/Augsburg: waste management concepts for municipalities, counties and Federal States (more than 30), planning, design, building, consulting, project management for waste management plants (12 plants as compost plants, sorting plants, incineration plants, landfills). Services in all service phases as: establishing the basis of the project, preliminary design, final design, building permission application, execution drawings, preparation of contract awards, assisting award process, project supervision, project control and documentation, based on the Official Scale of Fees for Services by Architects and Engineers (HOAI). Expert reports and consulting for administration, public bodies and industry in the field of solid waste management. R&D projects. Technical, personnel, organizational and financial management tasks.

1993 - 2002: Professor for Solid Waste Management

University of Applied Sciences, Braunschweig/Wolfenbuettel, Establishment of the Institute

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and Head of the Institute for Waste Management and Environmental Monitoring. Research in composting, anaerobic digestion, landfilling, solid waste management models, waste analyses.

2000 - 2002: General Director

Institute for Technical Optimization and Disposal Engineering, Agency for Technology Transfer and Innovation Ltd., Hannover. R & D projects in waste management concepts, analytics of solid waste, water and air. Consultancies for administration, public bodies and industry.

2002 - today: Professor and Chairholder, Director of the Institute

University of Stuttgart, Institute for Sanitary Engineering, Water Quality and Solid Waste Management (ISWA), member of the board of directors, Chairholder for Solid waste management and emissions (4 research groups, 15 researchers, 12 PhD-students and other staff members). Managing director of the Institute for Sanitary Engineering, Water Quality and Solid Waste Management (in alternation), (4 Professors, 70 researchers, 45 other staff)

Research emphases:

Biological systems and technologies in solid waste management (composting, anaerobic digestion)

Food waste (waste prevention, statistics, quantities, qualities)

Municipal solid waste management and industrial solid waste management (models, concepts, strategies, analyses for waste composition). National and international level (especially in megacities of tomorrow, example Addis Ababa) In-Situ-aerobisation of old landfills

Innovative laser based emission measurements, emissions calculation and procedures for emission reduction in waste management plants
Strategies in Circular economy

Additional Activities in Teaching and Research:

2009 – today: Lecturer at University of Hohenheim (Germany) for solid waste managementFaculty for agricultural sciences

2009 - today: Chairman Study course Environmental Engineering

Chairman of the interdisciplinary study programme Environmental Engineering at the University of Stuttgart

2011 - 2013: Dean

University of Stuttgart, Faculty of Civil and Environmental Engineering

2010 – today: Area coordinator for solid waste management at the Indo-German Center for Sustainability at IIT-Madras (Chennai, India)

Funded by BMBF/DAAD

Further scientific and technical activities (since 2002):

Since 2002: ERASMUS-Coordinator for 6 International Universities (Finland, Italy, Greece, Romania, Turkey)

Since 2010: Chairman of the board of trustees of Professors for Solid Waste Management of EdDE

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Association (EdDE e.V.), in addition **Chairman** of the working group Biological Solid Waste Management

- **Since 2011: Boardmember** of the German Quality Assurance Association for Compost and Chairman of the committee for quality assurance of compost and digestate (BGK e.V.)
- **Since 2012: Advisory board member** of the Joint Commission of Environmental Engineering (Umwelttechnik) Baden-Württemberg

Project Coordinator and Principal Investigator (since 2003, selected):

- Since 2019: Coordinator of the Project RUN "Rural-Urban Nutrient Partnership" funded by BMBF
- 2014 2018: Principal Investigator in project "Optimization potentials in biogas plants for solid waste in Baden-Wuerttemberg", funded by the Ministry for Science, Research and Art Baden Wuerttemberg
- 2014 2017: Principal Investigator in project "Spatial assessment of the organic waste potential from households in Baden-Wuerttemberg", funded by the Ministry for Science, Research and Art Baden Wuerttemberg
- 2011 2012: Principal Investigator of the project "Determination of discarded food and proposals for a minimization of food waste in Germany", funded by the Federal Ministry for Nutrition Agriculture and Consumer Protection (BMELV)
- 2009 2014: Coordinator of project TANIA (Reduction of aftercare period of landfills by extensive aeration on Dorfweiher Landfill), funded by the Ministry for Environment Baden-Wuerttemberg
- 2005 2013: Scientific Coordinator (University of Stuttgart) and Member of the Scientific Board of project IGNIS (Income generation in Megacities by sustainable valorization of municipal solid waste), funded by BMBF
- 2007 2009: Principal Investigator in project FORWAST (Overall mapping of physical flows and stocks of resources to forecast waste quantities in Europe and identify lifecycle environmental states of waste prevention and recycling), funded by EU DG Research (FP 6)
- **2005 2007:** Principal Investigator in project OPTIGEDE (Optimization of regional solid waste management), funded by EU LIFE
- 2003 2007: Scientific Coordinator of the project MODULAARE (Integrated Moduls for high efficient waste water treatment, waste management and renewable energy in tourism resorts), funded by BMBF

Publications (status 2019):

36 articles in books

17 papers in reviewed journals

40 publications in other journals and magazines

appr. 330 publications on conferences and seminars (conference proceedings)

Member of Editorial Boards and Committees (since 2000):

Editor of Books and Journals:

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Editor of "Stuttgarter Berichte zur Abfallwirtschaft" (Stuttgart Reports on Solid Waste Management), Oldenbourg Industrieverlag, Vol. 81-131 (since 2003)

Member of editorial board Müll + Abfall (since 2006)

Guest Editor: Jungbluth, Oechsner, Kranert, Kusch: Special Issue: Biogas, Engineering in Life Sciences, Wiley-VHC, Weinheim Vol 12, No 3, June 2012

Guest Editor: Kusch, S.; Kranert, M; Reiser, M.: Progress in Landfill Management and Landfill Emission Reduktion. International Journal of Environment and Waste Management (IJEWM), Inderscience Publishers. IJEEV3N4 2011

Kranert, Martin; Cord-Landwehr, Klaus: Einführung in die Abfallwirtschaft (Introduction in Solid Waste Management), Vieweg + Teubner, 4th edition, 2010, 665 pages Kranert, Martin: Einführung in die Kreislaufwirtschaft (Introduction in Circular Economy), Springer Vieweg, 5th edition, 2017, 832 pages

Scientific direction and organisation:

Zeitgemäße Deponietechnik (Deponieforum since 2017) (landfill technology): since 2003 annually

Abfalltage Baden Württemberg (Waste management Conference) biennial (2004 til 2012)

Bioabfallforum, Biogastag (Biowaste Forum): since 2013 annually German-Turkish Waste Conference – TAKAG: 2005, 2006, 2008, 2010, 2011, 2015,

Member of Scientific Committees (since 2010):

Ressourceneffizienz- und Kreislaufwirtschaftskongress (Congress on ressource efficiency and circular economy) Baden-Wuerttemberg, Co-organizer (since 2013)

Münsteraner Abfallwirtschaftstage 2011, 2013, 2015, 2017, 2019

ORBIT 2010, 2012, 2014, 2016

SARDINIA 2011, 2013, 2015, 2017, 2019

VENICE 2010, 2012, 2014, 2016, 2018

WasteEng 2010, 2012, 2014

Waste Safe 2013, 2015, 2017

RAMIRAN 2015, 2017

Recy & Depotech 2014, 2016, 2018

CRETE 2010, 2012, 2014, 2016, 2018

EURASIA Waste management Symposium 2016

International Polymeric Composites Symposium 2017

Wissenschaftskongress Abfall- und Ressourcenwirtschaft der DGAW: since 2011 annually

IRRC Waste to Energy 2012, 2015, 2017, 2019

Berliner Abfallwirtschafts- und Energiekonferenz 2016

3W-Conference Istanbul 2013

GIS 2011



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Member of Scientific and Professional Associations

ANS e.V. - Arbeitskreis für die Nutzbarmachung von Siedlungsabfällen e.V. ((Association for the Valorization of Municipal Solid Waste) ECN e.V. - European Compost Network

BWK e.V. - Bund der Ingenieure für Wasserwirtschaft, Abfallwirtschaft und

Kulturbau e.V.(Society of Engineers for Water Management, Waste Management and Agricultural Infrastructure)

DaBIb e.V. - Deutsche Abfallwirtschaftsbibliothek e.V. (German Waste Management Library)

DGAW e.V. - Deutsche Gesellschaft für Abfallwirtschaft e.V. (German Society for Waste Management)

DWA e.V. - Deutsche Vereinigung für Wasserwirtschaft, Abwasser und Abfall (German Association for Water Management, Waste Water and Solid Waste)

FEI e.V. - Forschungs- und Entwicklungsinstitut für Industrie- und Siedlungswasserwirtschaft sowie Abfallwirtschaft (Research and Development Institute for industrial and urban water management as well as waste management)

kontakt e.V. - Kontakt Umweltschutztechnik Stuttgart e.V. (Alumni Association Environmental Engineering Stuttgart)

KURS e.V. - Kompetenzzentrum Umwelttechnik (Competence Center Environmental Engineering)

ReTech e.V. - German Recycling Technologies and Waste Management Partnership Waste Club Stuttgart e.V.: Alumni Association WASTE Club (Intern. Master Programme WASTE)

Resonal Remarks by Werner Bidlingmaier