



Dr.-Ing. habil. Werner Bidlingmaier

born, 27th May 1946 in Bebra, Germany

Education

- 1967 Matura at the Kardinal von Galen grammar school in Kevelaer (humanistic faculty)
- 1967-1972 Civil engineering degree course at the University of Stuttgart: Diploma Thesis: "**Recycling in waste management**"
- 1979 Graduation as Ph. D. at the Faculty of Civil Engineering of the University of Stuttgart; subject: "**Factors for controlling the joint compostation of sewage sludge with organic structural additives**"
- 1990 Post-doctoral thesis at the Faculty of Civil Engineering of the University of Stuttgart; subject: "**Heavy metals in MSW**"
- 1991 Nomination as Privat Dozent at the University of Stuttgart in the field of: "**Domestic waste management**"

Professional activities:

- 1972-1993 **Research and development activities** as scientific employee at the Institute of Domestic Hydraulic Engineering, Water Quality and Waste Management, Dept. of Waste Technology, University of Stuttgart. Deputy head of Waste Technology department from 1976, head of Domestic Waste department from 1989
- 1993 Appointment as professor for waste management in faculty 10 of the University of Essen
- 1997 Appointment as professor for waste management at the Bauhaus-University in Weimar
- since 1974 Planning and expert report activities

Teaching activities:

- 1973-1976 Integration into teaching in the specialist field of "Waste technology" (University of Stuttgart), exercises/excursions
- 1977-1988 Own lectures on "Biological waste treatment" and "Compostation of sewage sludges" (University of Stuttgart)
- 1984-1994 Lecturer for the areas of "Landfilling", "Resource recovery", "Composting" and "Planning in waste management" in the English-language degree course "Infrastructure planning" at the University of Stuttgart
- 1988-1993 Organization of the waste management master course at the

University of Stuttgart with own lectures:

- Planning in waste management
- Collection and transportation of waste
- Basic waste-technical principles
- 1989-1996 Teaching appointment for the "Waste management" lecture at the HAB in Weimar
- since 1992 "Biological waste management" lecture at the Free University of Brussels
- 1992 Free University of Brussels scientific award
- 1993-1997 Professor for waste management at the University of Essen
- since 1997 Professor for waste management at the Bauhaus-University in Weimar
- 2014-20118 Lecture in "Waste management in developing countries" at the University Padua

Scientific publications:

- 172 articles and conference papers
- 8 books

Functions / memberships (all till 2011):

- Chair of the quality committee of the Federal German Compost Quality Association
- University of Hong Kong research committee expert
- Referee member of journal Waste Management
- Referee member of "Compost Science"
- Member of the Asian Institute of Technology in Bangkok
- Registered UNIDO expert since 1976
- Member in CEN 221 "Biodegradable packaging"
- Member of ATV
- Member of ANS
- Member of ECN
- Expert of the EC Commission
- Member of IWWG

Activities

The activities involve the execution of research projects, their scientific, technical, organisational and financial completion. The following fields are covered:

- Waste recycling and reuse and waste avoidance
- Waste management concepts for cities, regions and countries
- **Composting**
- AD
- Acquisition of basic waste-technical data
- Landfill
- Expert reporting activities

- **Waste management in developing countries**
- Teaching assignments
- Testing and introduction of separate collection systems
- Technology transfer

Composting

- Basic research with regard to biological and biochemical parameters
- Further development and mechanical-biological examination of composting systems
- Concept planning of composting and biogas systems in developing countries using simple technology.
- Steered intensive composting of solid waste substances with very high cellulose contents using suitable nitrogen carriers.
- Influence of filter additives from drainage on the composting processes in the case of the joint composting of communal refuse and sewage sludge in inhabitant-equivalent volumes.
- Examination of the Krupp-Varro composting procedure.
- Study regarding methods for determining the degree of composting. Selection and elaboration of the practically relevant method of analysis (Adopted in code of practice M10).
- Heidelberg composting plant trial order (ascertainment of the actual state, unit performance measurement, examination of the course of composting, refuse analysis).
- Modification of the analytical procedure used to determine the degree of composting.
- Trials regarding the composting of sludge together with carbon carriers such as wood dust and light fraction from dry, mechanical refuse sorting.
- Investigations regarding the compostability of communal sewage sludge together with domestic refuse in the future Lörrach administrative district composting plant.
- Examination of the sewage sludge concept from the biocell reactor in Dambach, Denkendorf.
- Examination of all sludge composting plants in the Federal Republic of Germany; mechanical and biological performance measurements, economic examination.
 - Examination of the layer-silo procedure for composting waste.
 - Examination of heavy metal contamination of waste composts.
- Examination of heavy metal contamination of untreated refuse.
- Research on the reduction of the heavy metal content of compost via separate collection of biomass and changes in the technical concept
- Mechanical-biological examination of a new waste composting procedure developed by Bühler.
- Investigations into the composting of organic components from separate domestic refuse collection (biowaste bin and green bin). Elaboration of mechanical processing and assessment basis for composting.
- Effect of separate collection on the emission of heavy metals, chlorine and fluorine from refuse incineration plants.
- Redevelopment work at the composting plant in the Reutlingen / Tübingen federal

model.

- Testing of various composting procedures for composting separately collected organic waste.
- Examination of the Herhof composting system (container composting).
- Examination of organic waste as regards its suitability for composting with regard to its heavy metal, dioxin and nutrient content, and its composting properties.
- Investigation into the influence of composting procedures on the odour emissions of a composting plant.
- Development of test procedures for determining the compostability of biologically degradable plastics.

Waste recycling and reuse of waste and waste avoidance

- Examination of American recycling systems (18 plants and organisation models) with regard to their technical and economical relevance and the quality of the secondary raw substances and products which are generated.
- Assessment, evaluation and technical examination of recycling systems (GMS plant in Berlin, R 80 procedure together with Krauss Maffai in Munich).
- Study regarding the use of waste paper in the production of preformed parts.
- Examination of recycling plants in Sweden.
- Studies regarding the entry of heavy metals into waste via products.
- Intensive examination of separate collection systems.
- Development of a plant for separating recycle fractions from separate collection.
- Development of a recycling concept for the Freudenstadt administrative district, comprising various bringer systems.
- Sorting of industrial waste into recyclable components.
- Development of methods for sorting plastic waste (together with the Free University of Brussels).
- Development of integrated recycling concepts for industrial concerns (Daimler-Benz, Nanz, etc.).

Acquisition of basic waste-technical data (carried out in more than 50 cities and administrative districts in different countries)

- Execution of numerous domestic and industrial waste sorting analyses in Germany and abroad
- Plant-specific acquisition of organizational models for separate collection under recycling-technical points of view
- Ascertainment of specific refuse volumes depending on development and the number of persons per household
- Ascertainment of specific refuse volumes depending on the container system
- Ascertainment of container data, filling level, apparent weight

Separate collection systems

Introduction of separate collection of bio waste, paper, glass, light fraktion in 11 Cities. The following parameters were investigated:

- Acceptance
- Degree of comprehension
- Absorption
- Public relations work
- Utilization of the collected materials
- Processing of the collected materials

Landfill

- Winnenden landfill degasification concept
- Involvement in the degasification of the Fresh/Kills New York landfill
- Design of a concept for the preparation of landfill gas for operating the diesel engines of the vehicles on the Fresh/Kills New York landfill
- Examination of landfill surface covers (Example: Karsau)
- Adaptation of the EPA Help model for calculating the water balance of a landfill to central European conditions, revision of the calculation model
- Investigations regarding the emission behavior of biologically pretreated residual waste in comparison with landfill and mechanically pretreated residual waste
- Mechanical properties and settling potential of biologically pretreated residual waste
- Waste water permeability of various surface seals
- Leaching of PAKs from landscape bodies in the case of various surface seals
- Degasification potential of mechanically/biologically pretreated residual waste
- Emission potential of mechanically/biologically pretreated residual waste
- Long-term behavior of mechanically/biologically pretreated residual waste

Other assignments

- Heavy metal and chlorine emission observation for refuse incineration and development of computer-aided models for determining the influence of the incineration technique and the input materials on emissions.
- Measurement of odour emissions in Swedish composting plants
- Design of a concept for, and monitoring of, odour measurements from domestic refuse containers in the case of different standing times.
- Development of public relations work programmes for collection systems with inhabitant involvement in the administrative districts of Freudenstadt, Rhein-Neckar and Zollern-Alb
- Development of a computer-aided model for designing waste management concepts
- Development of public relations work for the introduction of biowaste collection in Heidelberg
- Redevelopment of old sites; clearing chlorinated hydrocarbons from landfill sites via a biological process
- Investigations regarding biological residual waste treatment
- Training of waste consultants
- Development of a waste avoidance concept for the city of Mainz
- Development and standardisation of compost analysis methods

Planning and expert reporting activities

- Expert statement regarding the selection of a suitable composting procedure for the Lörrach administrative district and the site of the composting plant
- Investigation into the compostibility of raw and digested sewage sludge in the model area of the Constance administrative district as the basis of a regional waste disposal optimization system
- Expert report regarding Backnang landfill site degasification, Rems-Murr district
- Permanent consultant for the Rems-Murr district in the decision regarding the planning of a composting plant
- Calculation of compost filters for the Denkendorf sewage sludge composting plant
- Integrated recycling concept for the city of Stuttgart
- Energy balance and emission observation for the thermal use of waste to cover the thermal requirements of market gardens in the Kleve district
- Planning a sorting plant for handling waste from the green bin in Sinsheim
- Head of the working group for the realization of the Hessian waste management concept
- Planning the conversion of the Alzey composting plant
- Waste management consultancy for the Unna district
- Expert report regarding the plausibility of changing the Herten RDF plant
- Designing a modular composting plant for biowaste
- Involvement in planning the Augsburg composting plant
- Involvement in planning a sorting plant for the city of Augsburg
- Creation of a waste management concept for the Freudenkreis administrative district
- Evaluation of the plans regarding the conversion of the Ennepetal composting plant
- Proposals regarding the conversion of the Ennepetal composting plant to biowaste treatment
- Concept regarding the treatment of organic waste in the southern Pfalz region
- Waste management concept for the Rhein-Sieg district
- Re- development of Heidelberg composting plant
- Comparison of aerobic and anaerobic treatment procedures
- Test procedure regarding the evaluation of biodegradable plastics
- Evaluation of Herne landfill site planning
- Planning of the trial landfill site for biologically pretreated residual waste in Heilbronn
- Streamlining of the Leonberg composting plant
- Streamlining of the Neuwied composting plant
- Streamlining of the Bottrop fermentation plant
- Planning of the Alzey-Worms fermentation plant (technical controlling)
- Verification of equivalence according to TASI for the Lübben landfill site
- Observation of equivalence according to TASI for the Düren administrative district
- Re-planning of MBRA Düren (technical controlling)
- Technical controlling during the construction of the Peking composting plant

Court expert reports

58 expert reports

Software development

- Development of a computer-aided model for drawing up waste management concepts, comprising:
 - Material flows
 - System calculation
 - Utilization potential of waste streams
 - Investment requirements
 - Operating costs
 - Development of a simulation model for composting plants
 - Removal of heavy metals from waste
 - Program for calculating odour emissions
 - Development of a program for drawing up industrial waste management concepts

Activities abroad

- US West coast planing a RDF plant.
- Kathmandu, Nepal, feasibility study regarding the restructuring of waste management and realization planning.
- Singapore, Delhi, Nagpur and Bangkok to draw up a training and advanced training concept for specialists in the waste disposal sector in the Asian region.
- Sao Paulo, Brazil, conception of sludge disposal from the existing and two new waste water purification plants (150 m³ sludge/d).
- Accra, Ghana, to document currently practiced recycling methods and technology and to draw up further suitable concepts, taking local conditions into consideration (acceptance, no loss of jobs, organizational models).
- Kathmandu and Bhaktapur, Nepal. Determination of the contents for the 2nd phase of the project (see above) and investigations regarding the integration of the city of Bhaktapur. The concept had to involve the cooperation of the population. Cooperation with local, American and German ethnologists, social scientists and technicians
- Accra, Ghana. Involvement in the feasibility study regarding the implementation of a project for the reorganisation of waste collection and the establishment of waste treatment. Development of a mixed technology concept on the basis of intensive community development work. Drafting of technologies which are produced and accepted in the country.
- Tunis, Tunisia. Examination of the situation in the area of waste treatment and disposal with regard to the construction of a composting plant
- Accra, Ghana, decentralised composting, involvement of the population and recycling.
- Planing of a composting plant in Dubai, Emirates
- Waste management concept for Sana, Jemen
- Shanghai, China. Involvement in symposium regarding recycling in developing and fast-developing countries.

- General plan regarding waste disposal in Indonesian cities.
- Creation of a waste disposal plan for Bujumbura, Burundi
- Creation of waste management and construction of a pilot landfill in Kuhlna, Bangladesh
- Construction of a composting plant in Phnom Phen, Cambodia
- Environmental infrastructure planing for Lampun city, Thailand

Awards

- Sientific award of the Free University of Brussels 1993
- A Life for Waste, IWWG 2015

Supervision of 216 Diploma- and Master Thesis**Supervised of 42 PHD**

8 of his PHD Students are professor at a University or research institut today