

**Institute of Environmental  
Engineering and Management (IEEM)**

at the University of Witten/Herdecke gGmbH

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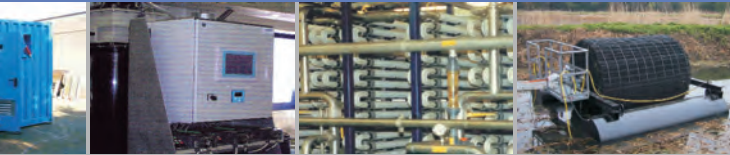
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**Institute of Environmental  
Engineering and Management (IEEM)**

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**Institut für Umwelttechnik und Management**  
an der Universität Witten/Herdecke gGmbH



**Fields of Research**

Economics and engineering in the fields of water and sanitation:

- Organisational development
- Cost optimisation
- Financing concepts
- Municipal and industrial wastewater management
- Water efficiency
- Wastewater disinfection

The international focus of IEEM's activities goes along with the regional development of the world water sector



The listed fields of research provide a short overview. Broader descriptions, including other fields of activities and specific topics, can be found in the project reference sheets or on our website [www.uni-wh-utm.de](http://www.uni-wh-utm.de).



**Application - oriented research in the conflicting area between economics and engineering**

**Science stimulated by practical application - Practical application inspired by science**

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 Practical application inspired by science**



Prof. Dr.-Ing. Dr. rer. pol.  
 Karl-Ulrich Rudolph  
 • Director of IEEM •

**Integrating technical and management  
 economics in water and sanitation**

Since its foundation, the IEEM - Institute of Environmental Engineering and Management at the University of Witten/Herdecke gGmbH, has remained unique in its strong integration of technical (engineering) and economic (management) issues.

We focus on topics of water and sanitation, closely linked to applied environmental economics. Research and development activities of IEEM for cost-optimisation in the wastewater sector have had a strong impact on the German discussion (and even legislation), especially regarding the "professionalised municipal utility", various PSP (private sector participation) models, like the BOOT (Build, Own, Operate and Transfer-Model) and innovative organisational models (namely - Water Franchise), for which IEEM pioneered in research and scientific advise for implication.

*Rudolph*  
 Prof. Dr.-Ing. Dr. rer. pol. Karl-Ulrich Rudolph

**Applied research**

Ongoing projects deal for example with water efficiency, especially water leakage reduction programmes in supply networks using remote monitoring and control, with novel wastewater disinfection, process water purification, specific concepts for wastewater reuse and wastewater management process control of wastewater infrastructure.



**International orientation**

As it has already been in the past, international co-operation is getting more and more important. This applies to industrialised countries in the western world as well as to transforming and developing countries. The Director of IEEM is Coordinator of the UN Water DPC Task Force on Capacity Development in Water Efficiency.



**High Brain - Lean Tech**

According to our approach stage-wise construction and enlargement concepts for sewage treatment plants, which are eligible for financing, are researched and developed, using simple and cost-efficient civil constructions (preferably built by local companies) in connection with intelligent process technologies.



**Integrated management approaches**

The limiting factor of success is not necessarily a lack of financial budgets; more often, there are political and institutional deficits, counter productive incentives and technical-economic structures that fail, leading to malfunctions during operation (→ developing countries) and/or to avoidable additional costs (→ industrialised countries).



The close integration of technical and economic know-how is essential to IEEM. Based on such a holistic understanding, engineers and economists at IEEM are able to develop and deliver cost-efficient technical and environmentally friendly solutions in water supply and wastewater management, including water reutilisation as well as solid waste management and recycling.