

# Environmental Protection through Process Instrumentation – Industrial Requirements and Constraints

**Speaker: Gerald Steiner, Anton Paar GmbH**



Process instruments are used for the continuous real-time monitoring of countless industrial-scale processes and plants, playing a vital role for protecting the environment. Their protective function can be viewed from several sides: preventing potentially harmful matter from polluting the outside of the process, impeding unwanted contamination of otherwise clean processes, or minimizing resource use. Many process parameters of interest have not yet been directly measurable or keep emerging from novel applications, triggering considerable interest from plant operators. Some of these emerging challenges will be addressed in the tutorial.

In any case, the development of process instrumentation in general, and for environmentally critical applications in special, needs to satisfy industrial requirements considerably different from other types of sensors. The tutorial gives an overview of the essential requirements for process instruments, covering process connections and installation, sample conditioning, corrosion resistance, hygienic design, electrical interfaces, explosion protection, ambient and process conditions, and some advice for dedicated markets and application fields.

**About the speaker:** Gerald Steiner received the Dipl.-Ing. and Dr.techn. degrees in electrical engineering from the Graz University of Technology in 2002 and 2006, respectively. He joined the Anton Paar GmbH in 2007 where he currently is Development Manager for Process Instrumentation, concerned with the development of novel process sensors and instrumentation platforms. He holds the *venia docendi* in Electrical Measurement and serves as lecturer at the Graz University of Technology. He has authored and co-authored more than 80 journal and conference articles and serves as reviewer for several international journal in the field of measurement. His primary

research interests include process instrumentation, industrial inverse problems, and sensor and data fusion.

