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Carbon Management – From Vision to Industrial Application

Abstract: Carbon is a key element in industrial production, but CO₂ is also a greenhouse gas whose release into the atmosphere must be avoided. If its generation cannot be avoided for process-related reasons, then a comprehensive carbon management is required to enable climate-neutral production in industry. In the Carbon2Chem[®] project, partners from industry and science are successfully researching technical components that enable the implementation of concepts for CO₂ capture and utilization (CCU) as part of carbon management.

Keywords: carbon management, CO₂ capture and utilization (CCU), circular carbon use, industrial transformation, system integration

Biography: Gorge Deerberg has had a long and distinguished career in environmental, safety, and energy technology. He began his academic journey studying Chemical Engineering at the University of Dortmund from 1983 to 1990, where he earned his diploma degree in June 1990. He then worked as a scientific assistant at the Institute for Environmental and Safety Technology in Oberhausen starting in October 1990. In July 1995, he became head of the working group "System dynamics" at the Fraunhofer Institute for Environmental, Safety and Energy Technology UMSICHT. Following this, he completed his doctoral thesis in December 1996 at the Chair of Fluid Separation Processes under Prof. Paul-Michael Weinspach at the University of Dortmund. In July 1997, he took on the role of head of the department "Process simulation, optimization and monitoring" at Fraunhofer UMSICHT. By January 2003, he had become a member of the institute's management and a scientific director. From June 2006 to August 2022, he served as deputy head of the institute and Division Director for Processes. Since January 2011, he has also held an adjunct professorship in "Environmental and Process Engineering" at Ruhr University Bochum's Faculty of Mechanical Engineering. In June 2019, he was appointed professor in "Environmental Sciences" at FernUniversität in Hagen, Faculty of Cultural and Social Sciences. As of August 2022, he holds the position of Director for Transfer at Fraunhofer UMSICHT.