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FELLOW, ELECTROCHEMICAL SOCIETY
PROFESSOR & WHITACRE ENDOWED CHAIR
IN SUSTAINABLE ENERGY
AT TEXAS TECH UNIVERSITY

Electrochemical Technologies toward Sustainability and Circular Economy

Circularity and sustainability are typically used together and sometimes interchangeably leading to confusion and diluting the importance and value of the actions related to each other.

Electrochemical technologies are an excellent platform to contribute towards both sustainability and circularity. In this talk, I will present examples of electrochemical technologies that we are developing at the Chemical and Electrochemical Technology Innovation Laboratory at Texas Tech University towards water sustainability (e.g., ammonia and nitrate removal, electrochemical sensors) and circular economy including electrochemical valorization of sewage sludge.

GERARDINE (GERRI) BOTTE is a Professor and Whitacre Endowed Chair in Sustainable Energy at Texas Tech University (TTU) and the Founding Director of the National Science Foundation (NSF) Engineering Research Center for Advancing Sustainable and Distributed Fertilizer Production, CASFER, a \$51million investment of the NSF plus an infrastructure that leverages a vibrant innovation ecosystem and institutional support of five partner academic institutions. She served as the Whitacre Department Chair in Chemical Engineering at TTU for three years before becoming CASFER Director. She has served in leadership roles for both the International Society of Electrochemistry and the Electrochemical Society and is currently the President the Electrochemical Society (2023-2024). In 2023, she was elected a member of the National Academy of Science of Venezuela, in 2014, she was named a Fellow of the Electrochemical Society for her contributions and innovation in electrochemical processes and engineering. She became a Chapter Fellow of the National Academy of Inventors in 2012. She received her Ph.D. in 2000 (under the direction of Dr. Ralph E. White) and M.E. in 1998, both in Chemical Engineering, from the University of South Carolina. Dr. Botte received her B.S. in Chemical Engineering from Universidad de Carabobo (Venezuela) in 1994.