



Wednesday
September 10, 2025
3:10 pm
Room 1003 EECS

Prof. David Go

University of Notre Dame

Non-Thermal Plasmas for Revolutionizing Goods Production

It is well-recognized that non-thermal (non-equilibrium) plasmas have played a critical, if unsung, role in every day technologies, and really, our modern way of life. The microchips and processors that make up our phones, computers, and the entire information technology ecosystem all utilized plasma processing at some point in the manufacturing chain. While micro-fabrication technologies such as etching and sputtering are well developed and commercially deployed, the next evolution of plasma processing will expand the types and kinds of goods beyond electronics to include fertilizers, high-value chemicals, metals, and more, helping create a more energy resilient and security robust manufacturing sector. This talk will overview two areas that are primed for great impact based on processing at a plasma-liquid interface. The first is bulk-phase chemical and metal production using plasma electrolysis, where a plasma in contact with a solution drives useful solution-phase chemistry without the need for catalysts. The second is additive manufacturing, where a plasma in contact with aerosols containing functional inks accelerates and improves the printing process of functional devices. The talk will overview both fundamental work on the plasma-liquid interface and discuss specific application demonstrations that highlight recent advances, stressing the need for continued research and development to move the field toward practical technologies.

About the Speaker: David B. Go is the Viola D. Hank Professor of Aerospace and Mechanical Engineering and Vice President & Associate Provost for Academic Strategy at the University of Notre Dame. Prior to his current role, he was the Chair of the Department of Aerospace and Mechanical Engineering. Professor Go has published widely in the areas of plasma science and engineering, heat transfer and fluid dynamics, and chemical analysis and holds ten patents or patent applications, leading to two licensed technologies. Professor Go has been recognized with the Air Force Office of Scientific Research Young Investigator Research Award, the National Science Foundation CAREER award, the Electrochemistry Society Toyota Young Investigator Fellowship, the Electrostatics Society of America Rising Star and Distinguished Service Awards, and the IEEE Nuclear & Plasma Sciences Society Early Achievement Award. He has also been recognized as a Viskanta Fellow and received the Outstanding Mechanical Engineer Award from Purdue University. Professor Go is an ASME Fellow, Senior Member of IEEE, and former President of the Electrostatics Society of America. At U. Notre Dame, he has received the Rev. Edmund P. Joyce, C.S.C. Award for Excellence in Undergraduate Teaching and was a Kaneb Center for Teaching and Learning Faculty Fellow. Prior to joining Notre Dame in 2008, Professor Go received his B.S. in mechanical engineering from the University of Notre Dame, M.S. in aerospace engineering from the University of Cincinnati, and Ph.D. degree in mechanical engineering from Purdue University.