



## Events

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Other - Enabling Process Innovation through Computation (EPIC) Seminar Series

**Ethylene Oxide Catalyst and Process Innovations****Madan M. Bhasin, Ph.D., NAE member**

CEO (Innovative Catalytic Solutions, LLC), Chief Scientific Advisor (MATRIC)

Patrick F. Taylor Hall 1502  
September 11, 2015 - 03:30 pm**Abstract:**

Ethylene oxide and ethylene glycol are very large volume, commodity chemicals and building blocks for a large numbers of other derived chemicals-with annual production exceeding 50 Billion pounds per year. The key catalyst inventions leading to innovations of successively improved generations of ethylene oxide catalysts from about 70% to 90%, over three decades, will be presented. In addition, the process evolutions from the old multi-reactors in series, then parallel processes to the current designs of a single reactor to produce 500-1000 MMlbs/year, will be presented. These innovations have resulted in a simpler process designs having lower capital & operating costs along with process simplicity and enhanced process safety. Concurrently, Carbon dioxide emissions have been reduced enormously, from about 30% to 10%; a great contribution.

Watch the seminar online at: <http://lsu.webex.com/meet/nandakumar>

Sponsored by LSU Chemical Engineering

**Speaker's Bio:**

Bhasin joined MATRIC in 2009 as Chief Scientific Advisor and is responsible for planning and guidance of research projects and international business development. He also serves as a resource and mentor for both senior and junior staff at MATRIC. Bhasin has over 45 years of experience in the chemical industry, primarily with Union Carbide and Dow Chemical. His primary area of expertise is heterogeneous catalysis, with a strong emphasis on surface science and the analytical techniques involved in catalyst characterization. Bhasin is the recipient of numerous ACS and Catalysis Society awards and one AIChE award. DOW Chemical gave him the highest prestigious Hebert DOW Gold medal and the first President's award to anyone in research and development. He was elected ACS Fellow in the inaugural class of 2007 ACS Fellows. Dr. Bhasin was elected to the National Academy of Engineering in 2006. Bhasin has 25 U.S. patents and 24 publications in peer-reviewed journals. He was named Honorary Visiting Professor to Cardiff University in 2012, where he is working with Prof. Graham Hutchings and the Cardiff Catalysis Institute to start new research directions in hydrocarbon activation. He played a pivotal role in a successful patent litigation of one of his patents that awarded \$250+ millions to Dow Chemical in 2005.

