

## In-Person Departmental Colloquium



**Professor Stanislaus S. Wong**  
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*University of New York at Stony Brook,*  
*Stony Brook, NY 11794-3400*

Wednesday  
September 28, 2022  
1:00 – 2:00 p.m.  
Old Engineering  
Room 301

**Insights into the Chemistry  
and Physics of Multi-  
functional Nanoscale  
Systems**

# Insights into the Chemistry and Physics of Multi-functional Nanoscale Systems

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## **Abstract**

Our group is fundamentally interested in the design of a series of novel multi-functional nanoscale systems, using diverse chemical strategies. Such a multi-functional material often possesses unique catalytic, optoelectronic, and magnetic properties that are distinctive from and at times, superior to those of its individual constituent components. In essence, our hope and expectation is that chemical synthesis can be used to tune and tailor structure – property correlations. In this presentation, we focus on the applications of fundamental physical and chemical principles with respect to the synthesis of metal-containing and metal-oxide-containing nanostructures. In particular, we describe advances in the use of complementary, sustainable, and cost-effective solution-based methodologies that allow us to generate functional nanomaterials with high quality, purity, and crystallinity, in addition to control over size and shape. As examples, we have created a number of different architectures, relevant to solar and fuel cell applications.

## **Biosketch**

Stanislaus S. Wong is Distinguished Professor of Chemistry at Stony Brook University, and over the course of his career, has investigated not only the covalent surface chemistry of carbon nanotubes but also the synthesis, characterization, and applications of metal-containing nanostructures. He and his group are interested in developing viable sustainable strategies for producing novel nanomaterials of relevance for various applications ranging from energy to theranostics. Elected as a Fellow of the American Association for the Advancement of Science, the Royal Society of Chemistry, the American Chemical Society (ACS), and the National Academy of Inventors, Dr. Wong has received the ACS Inorganic Nanoscience Award, an Alfred P. Sloan Fellowship, the ACS Buck-Whitney Award, a National Science Foundation CAREER Award, in addition to the SUNY Chancellor's Award for Excellence in Scholarship and Creative Activities. Professor Wong has served as a Section Editor for Nanotechnology and is currently an Executive Editor for ACS Applied Materials and Interfaces.