



Kémiai Szakbizottság

Elnök: Juhászné Csapó Edit

Fizikai-Kémiai és

Anyagtudományi Munkabizottság

Elnök: Sápi András

Titkár: Janovák László

Meghívó

2026. szeptember 23. (szerda) 11:00-12:00

Helyszín: A Szegedi Akadémiai Bizottság székháza, Szeged, Somogyi u. 7.
110. terem

Prof. Dan V. Goia

Department of Chemistry and Biomolecular Science,
Clarkson University

***"Room temperature sinterable silver nanoparticles for
printable electronics"***

című előadására

*(Az előadás angol nyelvű összefoglalója, ill. az előadó rövid szakmai életrajza alább
található)*

Minden érdeklődőt szeretettel várunk!

ABSTRACT

‘Room temperature sinterable silver nanoparticles for printable electronics’

Dan V. Goia

Emeritus Professor

Department of Chemistry and Biomolecular Science

Clarkson University, Potsdam, NY 13699

Printed conductive structures based on silver nanoparticles are increasingly used in building traditional electronic devices and in novel applications including displays, sensors, and solar cells. In all cases, -and especially for thermally sensitive substrates-, lowering the sintering temperature of Ag nanoparticles remains an important technology driver as it leads to equipment simplification, shorter fabrication times, and significant energy savings. For these reasons, developing particles that can be consolidated into electrically conductive structures at ambient temperatures has long been the ‘Holy Grail’ of electronic industry.

In this lecture a novel precipitation method for preparing printable *concentrated* dispersions of uniform highly dispersed silver nanoparticles is presented. It will be shown that, by replacing the traditional polymeric dispersing agents with a novel low molecular weight reducing agent having surprising colloidal stabilization properties, it is still possible to obtain highly dispersed uniform silver nanoparticles. Their unique surface properties and excellent dispersion enable the formation of electrically conductive and transparent films at room temperature. The research strategy used in the development of silver nanoparticles and their dispersions as well as their properties and applications will be discussed in detail.

Biography

Dan V. Goia

Emeritus Professor

Department of Chemistry and Biomolecular Science

Clarkson University, Potsdam, NY 13699

Dr. Dan V. Goia is an emeritus professor in the Department of Chemistry and Biomolecular Science at Clarkson University. He earned his MS degree in chemistry from ‘Babes-Bolyai’ University of Cluj-Napoca (Romania) and his Ph.D. in physical chemistry from Clarkson University. Before joining the academic ranks in 2001, Prof. Goia held the position of R&D Director in the Electronic Materials Division of Degussa Corporation. For the last 40 years Professor Goia's research has focused on the preparation, characterization, and modification of metal and metal-compound particles and their applications in electronics, catalysis, medicine, biology, renewable energy, and metallurgy. He has made original contributions in elucidating the fundamental mechanisms that govern the formation of highly dispersed uniform particles in homogeneous solutions and developing methods to control their size, shape, composition, structure, and surface. In this field, Dr. Goia holds over 50 patents and has authored over 100 papers, book chapters, and conference proceedings. Presently, he works also as consultant for materials companies in the US, Asia, and Europe.