

Center for Bioengineering Innovation

2017 Lecture Series

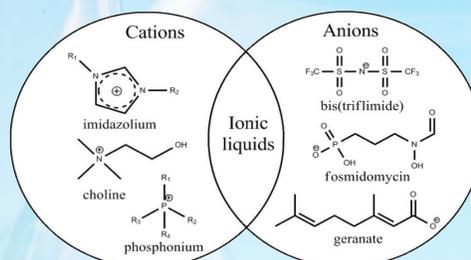
Therapeutic Applications of Antibacterial Ionic Liquids and Deep Eutectic Solvents

Dr. Andy Koppisch
Assistant Professor of Chemistry
Northern Arizona University

Friday, March 31, 2017
2:30-3:30 p.m.
Biology (Building 21), room 265

For more
information, visit
nau.edu/cbi/events

Ionic liquids (ILs) and deep eutectic solvents (DES) are families of molten salts that have a diverse array of chemical properties. ILs are typically comprised of an organic cation paired with either an organic or inorganic anion, and DES also include a neutral species along with the alkyl cation/anion. These materials are fluid at room temperature and may be chemically altered in a systematic manner (or "tuned") for utility in a variety of applications. Many IL/DES have been observed to facilitate disruption of the tertiary structure of some recalcitrant biopolymers, and this has fostered their development as antibacterial/antibiofilm agents.



Dr. Koppisch will present the development of antibacterial IL/DES, as well as their scope and effectiveness against biofilms of several clinically important bacterial pathogens. He will also discuss IL/DES as potential antiseptics and antibiotics, both on their own as well as a component of other therapeutic materials.



Dr. Andy Koppisch earned his BS in Chemistry from Colorado State University in 1996 and his PhD in Biological Chemistry from the University of Utah in 2002. His graduate thesis focused on the characterization of enzymes within bacterial terpenoid biosynthesis as antibiotic targets. He completed postdoctoral appointments in metabolic engineering at Stanford University in 2004 and in microbiology/biochemistry at Los Alamos National Laboratory (LANL) in 2007. Dr. Koppisch held a staff position in Bioscience at LANL until he joined the Chemistry Department at NAU as an Assistant Professor in 2011.

The Koppisch laboratory uses tools developed in bioorganic chemistry to address problems that affect human health. Significant foci within his research team are the development and characterization of compounds with antibacterial and antibiofilm properties, the identification of new metabolic targets for antibiotic intervention, and investigating the interface of IL technology with living systems.