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## Thermophysical Property Research at NIST

*Elisabeth Mansfield*

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**NIST**

**National Institute of  
Standards and Technology**  
U.S. Department of Commerce

The Thermophysical Properties of Fluids group at the National Institute of Standards and Technology (NIST) focuses on the measurement and modeling of the thermodynamic and transport properties of fluids and fluid mixtures. The experimental capabilities of the group include state-of-the-art apparatus in pressure-volume-temperature, phase equilibria, speed of sound, viscosity and thermal conductivity. After measurements are completed, they are modeled or correlated to predict thermophysical property services for a wide range of industrial applications. These industrially important fluids include industrial chemicals, refrigerants, fuels and aqueous systems. This talk will provide a background into the research NIST performs and the importance of NIST as the Nation's National Metrology Institute. It will cover measurements and models for a few select systems, demonstrating the group's approach and the direct impact on industry.

### **Bio:**

Elisabeth Mansfield is the Group Leader of the Thermophysical Properties of Fluids group in the Applied Chemicals and Materials Division of NIST. Dr. Mansfield received her PhD in Analytical Chemistry in 2007 from the University of Arizona. During her time at NIST, she has performed research in a variety of different areas including thermogravimetric analysis, carbon nanotube characterization, biocorrosion and vapor-liquid equilibrium. She has received both a Silver and Bronze Medal from the Department of Commerce for her research. Her current research interest is bubble-point mixtures of binary systems for industrial applications.

September, the 20th, 2017 at 12:00  
Sala Consiglio, 2nd Floor, Building B12, Campus Bovisa  
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