

## HELIUM NANODROPLETS AND LIQUID HOT NAGMA: WHAT STUDENTS CAN LEARN ABOUT THERMODYNAMICS FROM INFRARED SPECTROSCOPY AND A MODEL DIPEPTIDE

ALAINA R. GUNN, *Natural Sciences and Engineering, University of South Carolina Upstate, Spartanburg, SC, USA.*

Students taking physical chemistry often find the thermodynamics section of the course confusing and even downright uninteresting. In part, this is due to the abstract nature of concepts, such as entropy and enthalpy, as well as the math skills that are required and/or the transference of skills that students already possess.

An activity was created and implemented for use in an undergraduate physical chemistry course to guide students through an application of thermodynamics through the lens of spectroscopy. The activity combines current spectroscopic research techniques<sup>a</sup> together with concepts covered in class to give students a complete picture of this topic. In this talk, the activity and its implementation will be discussed along with preliminary outcomes.

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<sup>a</sup>Leavitt, C. M.; Moore, K. B.; Raston, P. L.; Agarwal, J.; Moody, G. H.; Shirley, C. C.; Schaefer, H. F.; Douberly, G. E. Liquid Hot NAGMA Cooled to 0.4 K: Benchmark Thermochemistry of a Gas-Phase Peptide. *J. Phys. Chem. A* 2014, 118 (41), 9692–9700.