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**Effect of protein (Myoglobin) on the isotropic to nematic phase transitions** GERMANO IANNACCHIONE, PARVATHALU KALAKONDA, JOHN ARNOLD, SHAUN MARSHALL, IZABELA STROE, Worcester Polytechnic Institute — High-resolution calorimetry and broad-band dielectric spectroscopy have been performed on colloidal dispersions of myoglobin protein in a nematic liquid crystal as a function of protein content. The myoglobin protein was uniformly dispersed in the dry state in pentylcyanobyphenyl (5CB) liquid crystal with weight fraction from 0 to 100 wt%, and cover the temperature range of 180 to 420 K under near equilibrium conditions. Such colloidal systems may be attractive to isolate the behavior of the protein as it interacts with the desired liquid crystal property as well as probing the effect of functional/active nano-particles on LC behavior.

Germano Iannacchione
Worcester Polytechnic Institute

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