

Abstract Submitted
for the SHOCK13 Meeting of
The American Physical Society

Hydrogen in Simple Molecular Systems under Pressure¹ GUSTAV BORSTAD, Department of Physics, Washington State University and Institute for Shock Physics, CHOONG-SHIK YOO, Department of Chemistry, Washington State University and Institute for Shock Physics — Hydrogen-rich systems are studied due to their importance in revealing fundamental properties and giving rise to novel behaviors as well as the hope of using the currently known and remarkable properties of hydrogen for applications. The hydrogen molecule (and its isotopic forms) is of interest in its own right as the simplest molecule, yet it forms an extremely complicated solid with many interesting properties observed or expected to be observed under high pressure. Furthermore, the novel behavior observed in simple binary mixtures of hydrogen and simple molecular systems, such as water, ammonia, and methane, where the mixture alters the structure and properties of both systems, giving rise to a new system different from either specie alone. This provides interesting insights into the effects of the environment on these molecules and on their resulting interactions and properties. In this talk, we will present a summary of the results obtained from Raman spectroscopic studies on these systems, and we will compare and contrast the properties of these hydrogen-rich mixtures as the simple molecular species is varied.

¹The work has been performed in support of NSF-DMR (Grant No. 0854618 and 1203834).

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Date submitted: 17 Jan 2013

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