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**Hydrogen Materials Compatibility in Piezoelectrics** KYLE ALVINE, STAN PITMAN, CHARLES HENAGER, VAITHIYALINGAM SHUTTHANANDAN, Pacific Northwest National Laboratory, CRAIG BROWN, MADHU TYAGI, TIM JENKINS, TERRY UDOVIC, National Institute of Standards and Technology — Hydrogen materials compatibility is an important materials science issue for hydrogen storage and delivery in hydrogen vehicle technology and infrastructure and to a lesser degree the microelectronics industry where hydrogen passivation is required. Piezoelectrics are one such material. They are used in direct injection hydrogen internal combustion engines (H2ICE) as actuators but tend to foul rapidly in high pressure hydrogen. Ferroelectric random access memory (FERAM) also suffers similar degradation issues. We present high pressure hydrogen absorption and diffusion findings for PZT and BaTiO3 piezoelectric materials. Data is based on quasi-elastic neutron (QENS) scattering and elastic recoil detection analysis (ERDA).

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