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**Pressure Raman experiments on  $\text{Ge}_x\text{As}_x\text{Se}_{1-2x}$  glasses\*** PING CHEN, P. BOOLCHAND, Univ. of Cincinnati — It is known<sup>1</sup> that variations in the non-reversing enthalpy associated with glass transitions,  $\Delta H_{nr}(x)$ , display a global minimum ( $\sim 0$ ) in the  $0.09 < x < 0.16$  range and the term increases at  $x > 0.16$  and at  $x < 0.09$  in the titled glasses. In this reversibility window, glasses are thought to be in the Intermediate phase and form stress-free networks. Since the size of As, Ge and Se are nearly the same, Raman pressure experiments using a DAC provide a useful way to check the stress-free nature of glasses in the window<sup>2</sup>. Preliminary results at  $x = 0.11$ , and  $0.14$ , compositions in the reversibility window, reveal Raman frequency of the symmetric stretch of  $\text{Ge}(\text{Se}_{1/2})_4$  tetrahedra to blue-shift linearly with external pressure (P) once  $P > 0$ . At  $x = 0.18$ , a composition in the stressed-rigid phase, a blue-shift of the mode is also observed but only once P exceeds a threshold ( $P_c$ ) value of 14 kbar. The present finding of a finite value of  $P_c$  at  $x = 0.18$ , but its vanishing at  $x = 0.11$  and  $0.14$ , is quite similar to a previous one in binary  $\text{Ge}_x\text{Se}_{1-x}$  glasses<sup>2</sup>. We are now examining other glass compositions in the present ternary. \* Supported by NSF grant DMR 04-56472 <sup>1</sup> T. Qu et al. Mater. Res. Soc. Symp. Proc. **754**, 111 (2003). <sup>2</sup> F. Wang et al. Phys. Rev. B, **71**, 174201 (2005).

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