Slow homogenization of binary As-S melts and vibrational evidence of As Quasi-Tetrahedral Units in glasses. SOUMENDU CHAKRAVARTY, SHREERAM DASH, RALPH CHBEIR, PING CHEN, PUNIT BOOLCHAND, Univ of Cincinnati — FT-Raman profiling experiments on binary As-S melts are undertaken to establish the kinetics of homogenization of 1gram batch sizes using As$_2$S$_3$ and dry S as starting materials. These data reveal that melts take typically 3 weeks of reaction at 700C to homogenize. Such slow kinetics of melt homogenization were noted earlier in Ge–S binary and reflect the super-strong$^1$ character (fragility index m <20) of melts in the Intermediate Phase$^1$ composition range. An important consequence of these homogenization experiments is that the Raman active 537 cm$^{-1}$ mode predicted$^2$ for the stretch vibration of S=As of Quasi Tetrahedral S=As(S$_{1/2}$)$_3$ units is now observed in homogeneous glasses. Compositional trends of the mode scattering strengths, fragility index and the non – reversing enthalpy of relaxation at $T_g$ in these homogeneous glasses will be presented.