Abstract Submitted
for the SHOCK11 Meeting of
The American Physical Society

Dielectric properties and phase transitions of $TlIn(S_{1-x}Se_x)_2$ polycrystals under pressure OLEKSANDR GOMONNAI, ROMAN ROSUL, PAVLO GURANICH, ALEXANDER SLIVKA, Uzhhorod National University, Uzhhorod Ukraine, MYKHAILO RIGAN, VASIL RUBISH, Uzhhorod Scientific and Technology Center, Uzhhorod Ukraine, ALEXANDER GOMONNAI, Institute of Electron Physics, Ukr. Nat.Acad. Sci., Uzhhorod Ukraine — $TlIn(S_{1-x}Se_x)_2$ polycrystals belong to class of complex ferroics of different dimensionality and are interesting to be studied since they are characterized by the existence of an incommensurate phase and polycritical phenomena.. At atmospheric pressure, anomalies in the temperature interval 160–220 K are observed in the temperature dependences of dielectric constant *ε(T)* in polycrystals $TlIn(S_{1-x}Se_x)_2$, corresponding to phase transitions into incommensurate and ferroelectric phases. In the pressure range 530 MPa $\leq p <$ 660 MPa, a qualitative change of the temperature dependences of dielectric constant is observed, related to polycritical phenomena. Based on the studies of the temperature dependences of the dielectric permittivity at different hydrostatic pressures, (p, T) phase diagrams of the $TlIn(S_{1-x}Se_x)_2$ polycrystals ($0.01 \leq x \leq 0.07$) were built.

Oleksandr Gomonnai
Uzhhorod National University, Uzhhorod, Ukraine

Date submitted: 08 Feb 2011 Electronic form version 1.4