

# P-T X-Ray diffraction studies of $\text{LuFe}_2\text{O}_4$ electronic ferroelectrics

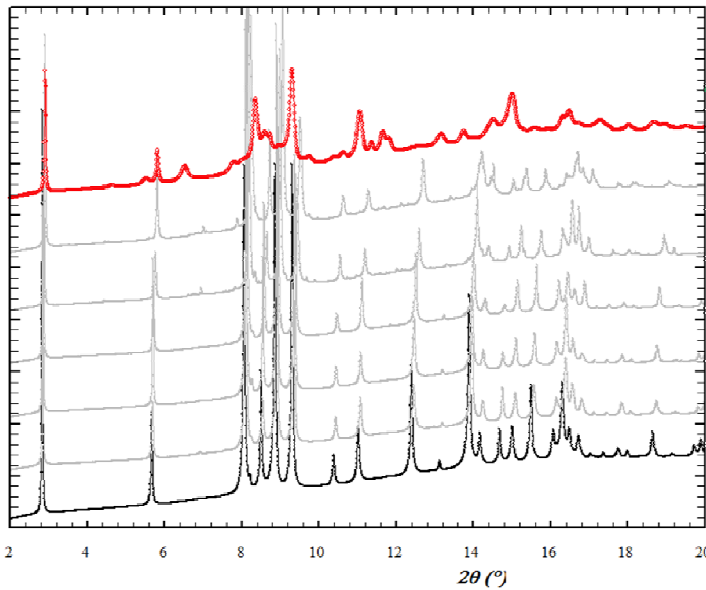
$\text{LuFe}_2\text{O}_4$

T=300K

A)

High Pressure Phase

- Large Orthorhombic cell
- Recoverable at  $P_{\text{atm}}$



18 GPa: High Pressure Phase

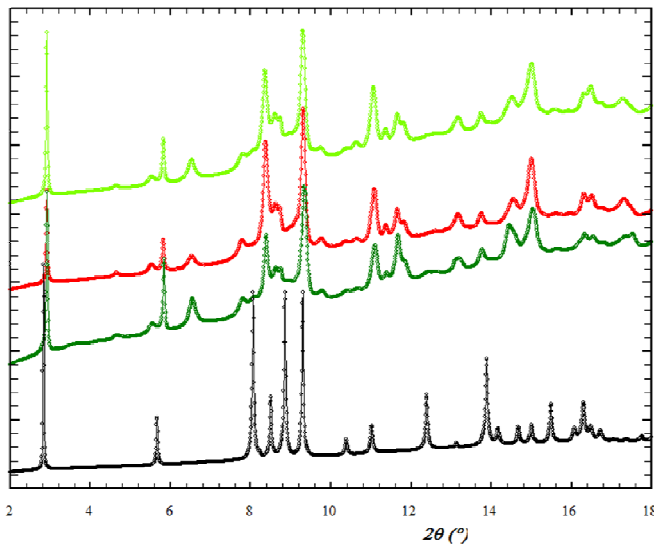
6.6 GPa : Structural transition

3.7 GPa : Superstructure reflections

2.5 GPa : Superstructure reflections

2.2 GPa : Monoclinic distortion  
Structural transition

0 GPa : Low Pressure Phase R-3m



P= 13.5 GPa, T= 473 K

P= 18 GPa, T= 300 K

P= 22 GPa, T= 50 K

P= 0, T=300K ,  
Low Pressure Phase



T increase  $\implies$  Transition Pressure decrease