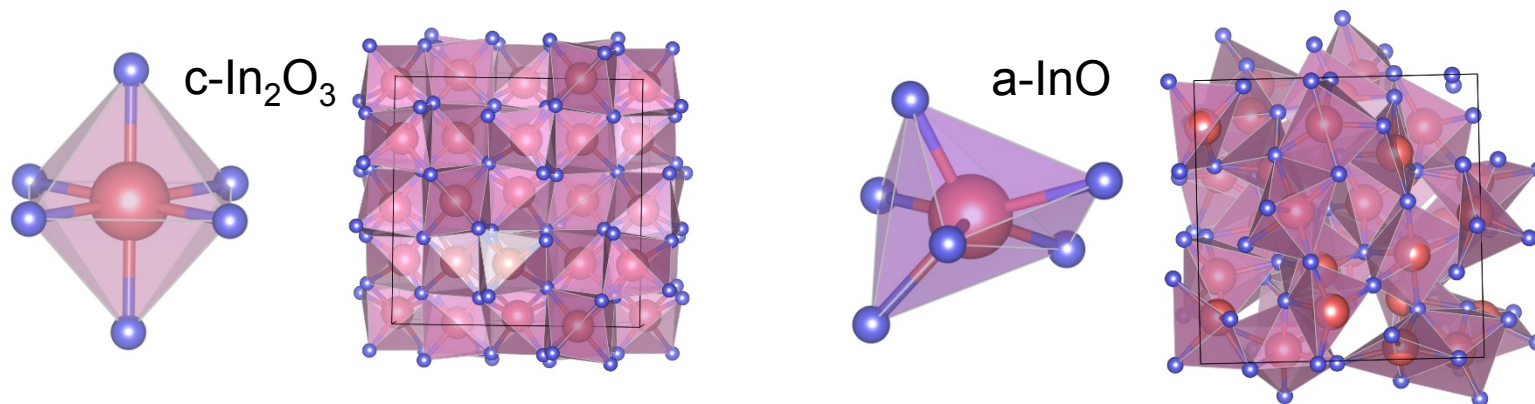




Crystalline vs amorphous transparent oxides



Structural	Ordered network of regular MO_x	Disordered network of distorted MO_x
Optical	Optical Band Gap >3 eV Transparency in visible 80 %	Same
Transport	c- In_2O_3 :	a-IO:
- Carriers	V_O ($10^{19}cm^{-3}$); $Sn^{4+}_{In^{3+}}$ ($10^{20}cm^{-3}$)	$10^{20}cm^{-3}$; same in ITO, IZO, at 4:1
- Mobility	$\sim 60-100$ cm^2/Vs	~ 20 cm^2/Vs (< 0.1 cm^2/Vs for a-Si)
Mechanical	Brittle	Bendable (bending curvature, $\rho \sim 2cm$)