

EXPERIMENT 2: DISPERSION ANALYSIS (CORRECTED PHYSICS)

Panel (a): Real n shows negative values around 2.8 THz Panel (b): Minimal absorption losses

Panel (c): Phase velocity up to $5.8c$ (superluminal) Panel (d): Group velocity $< c$ (causality OK)

KEY: 2.88 THz bandwidth, $5.8c$ max phase, causality preserved