

Supporting information:

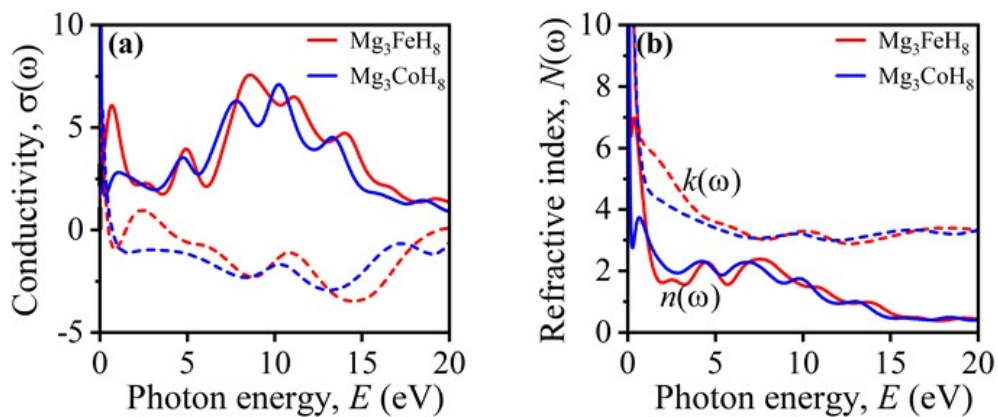


Fig. S1: Optical conductivity and refractive properties of Mg_3ZH_8 ($Z = \text{Fe}, \text{Co}$): (a) real and imaginary parts of optical conductivity $\sigma(\omega)$, and (b) refractive index $n(\omega)$ and extinction coefficient $k(\omega)$ as a function of photon energy. The results indicate metallic behavior with strong charge transport and optical response.