

Electronic Supplementary Information

# Probing the properties of lattice vibration and surface electronic states in magnetic semiconductor CrPS<sub>4</sub>

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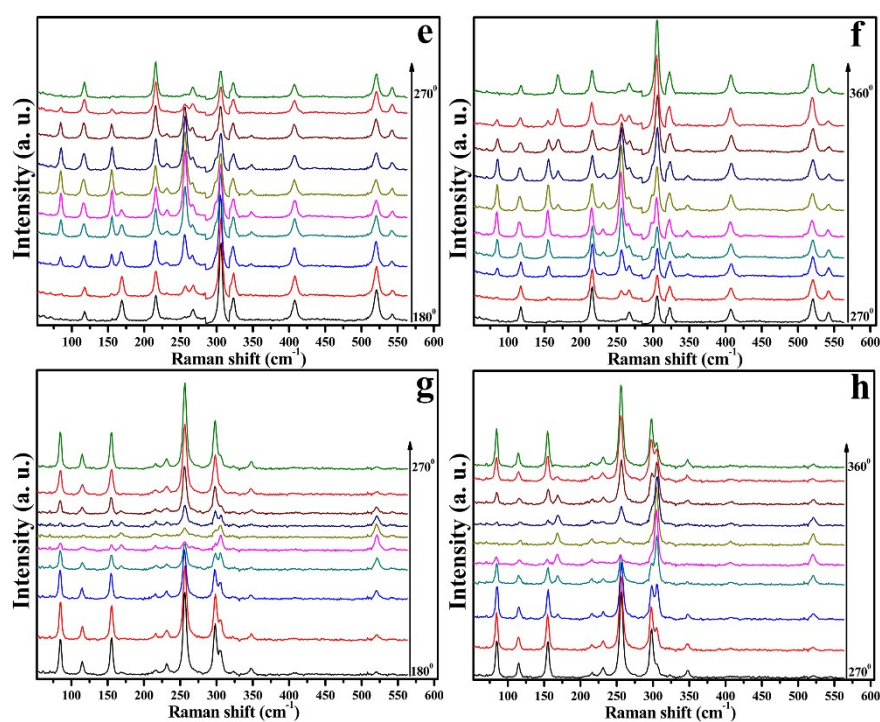


Fig. S1 The angle-dependent Raman peak intensity for (001) surface with the crystals rotated in 10° steps, (e) and (f) correspond to parallel polarization, (g) and (h) correspond to perpendicular polarization.

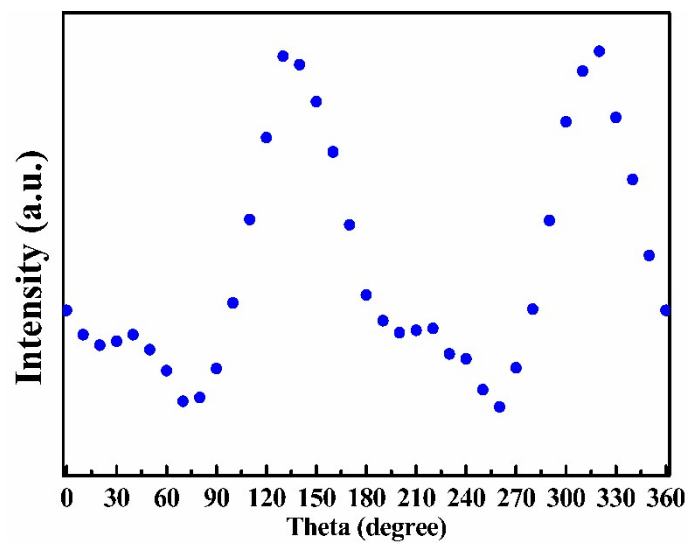


Fig. S2 The Raman shift located at  $305.4\text{cm}^{-1}$  for perpendicular polarization is fitted by Lorentz, the graph shows the relationship between rotating angle and normalized peak intensity.