

Electronic Supplementary Information

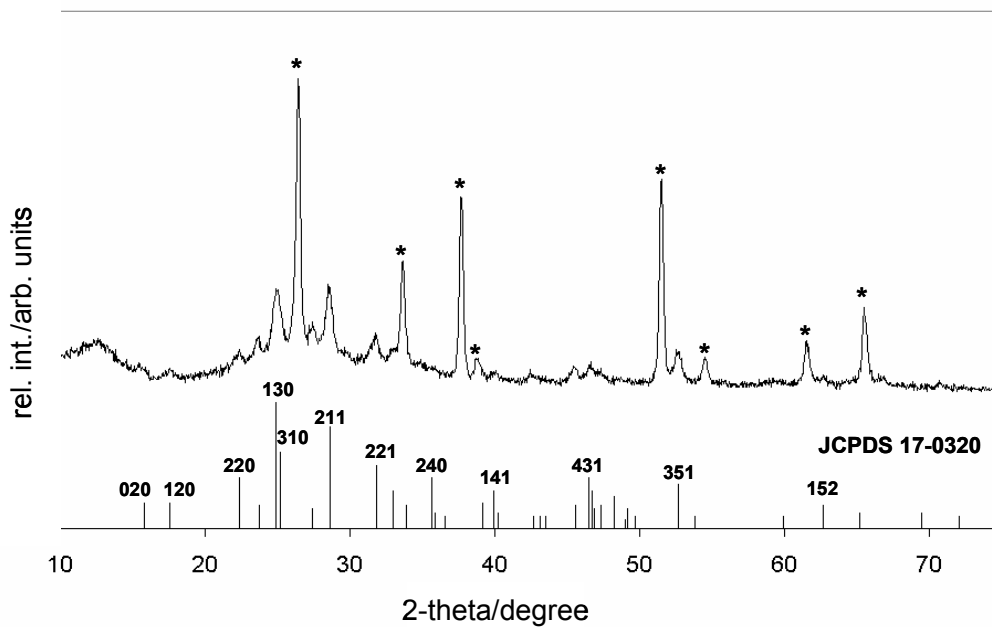


Fig A. Powder XRD of as-deposited thin films deposited from thioglycolate/thiosulfate-based baths, with main peaks indexed as shown to orthorhombic Bi_2S_3 (JCPDS 17-0320). No evidence for secondary crystalline phases (*e.g.* Bi_2O_3 or $\text{Bi}(\text{OH})_3$) was obtained.*Signals assigned to FTO-glass substrate.