Supporting Information

First Synthesis of EuS Nanoparticle Thin Films with Wide Energy Gap and Giant Opto-magnetic Efficiency on the Glass Electrode

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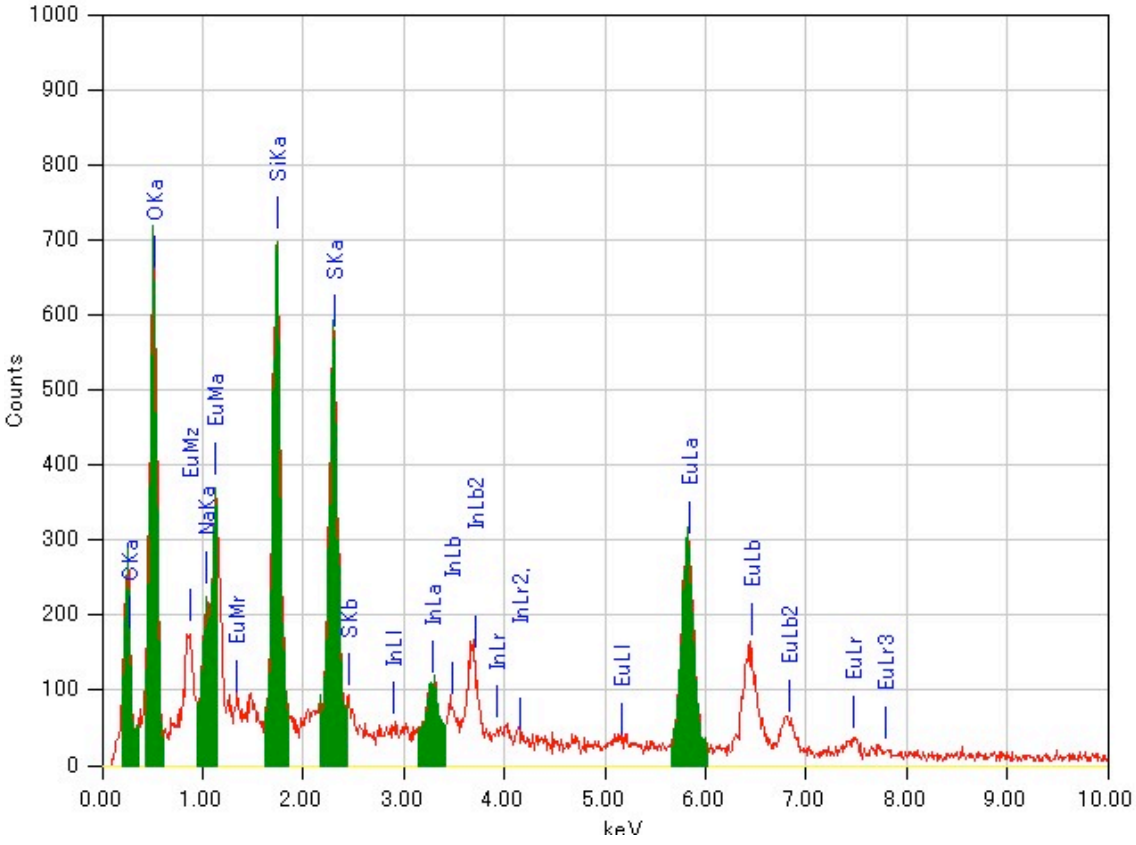


Figure S1 EDX analysis of EuS nanoparticle thin film by electro-chemical deposition of Eu(III) dithiocarbamate complex potentiostatic polarization at -1.3 V (SCE). EDX analysis was performed with a SEM measurement.

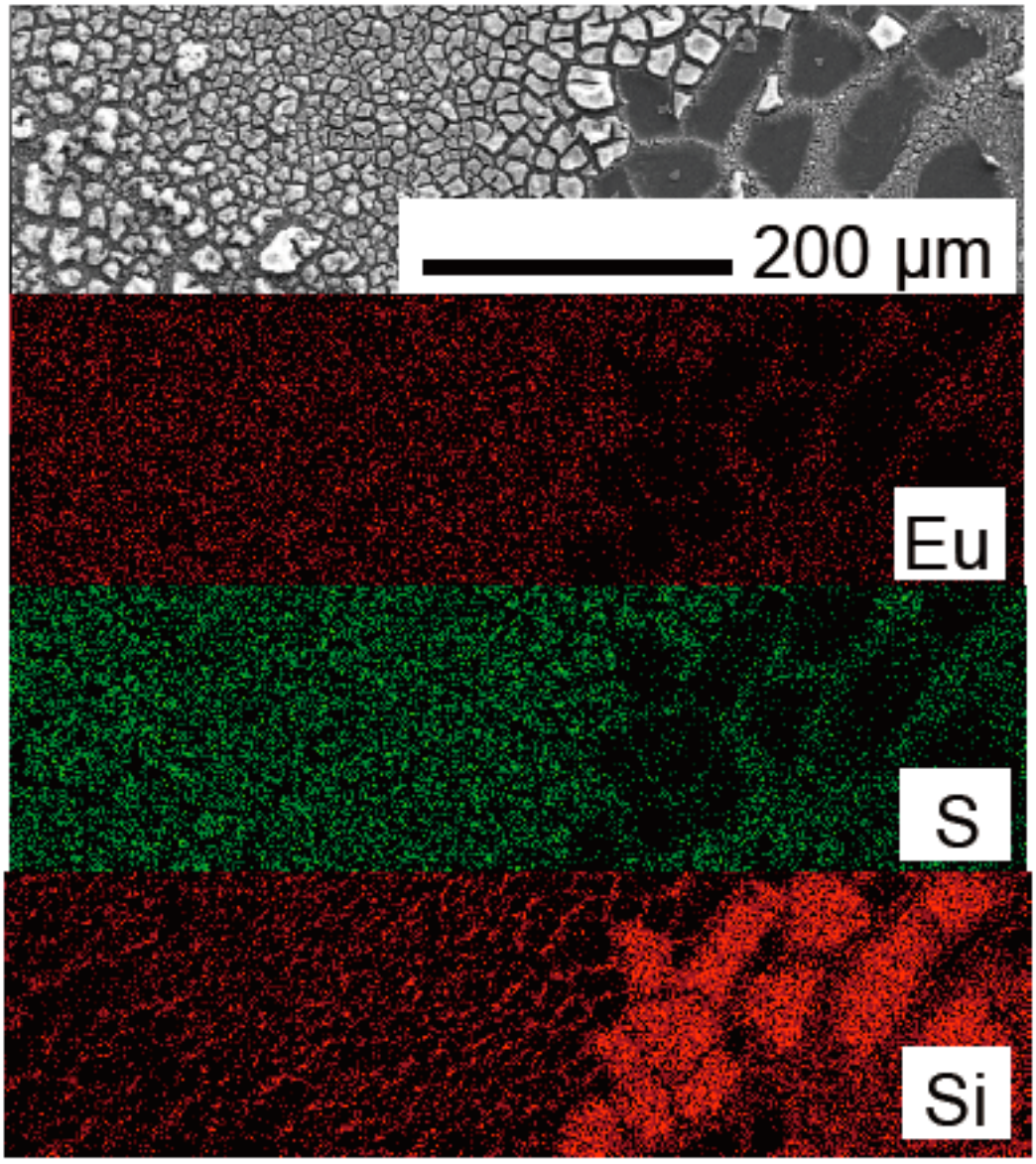


Figure S2 EDX mapping image of EuS nanoparticle thin film by electro-chemical deposition of Eu(III) dithiocarbamate complex potentiostatic polarization at -1.3 V (SCE). EDX analysis was performed with a SEM measurement. Cracks on the EuS thin film surface is due to dry process for SEM measurements. Si element is assigned to SiO_2 glass substrate as an electrode.

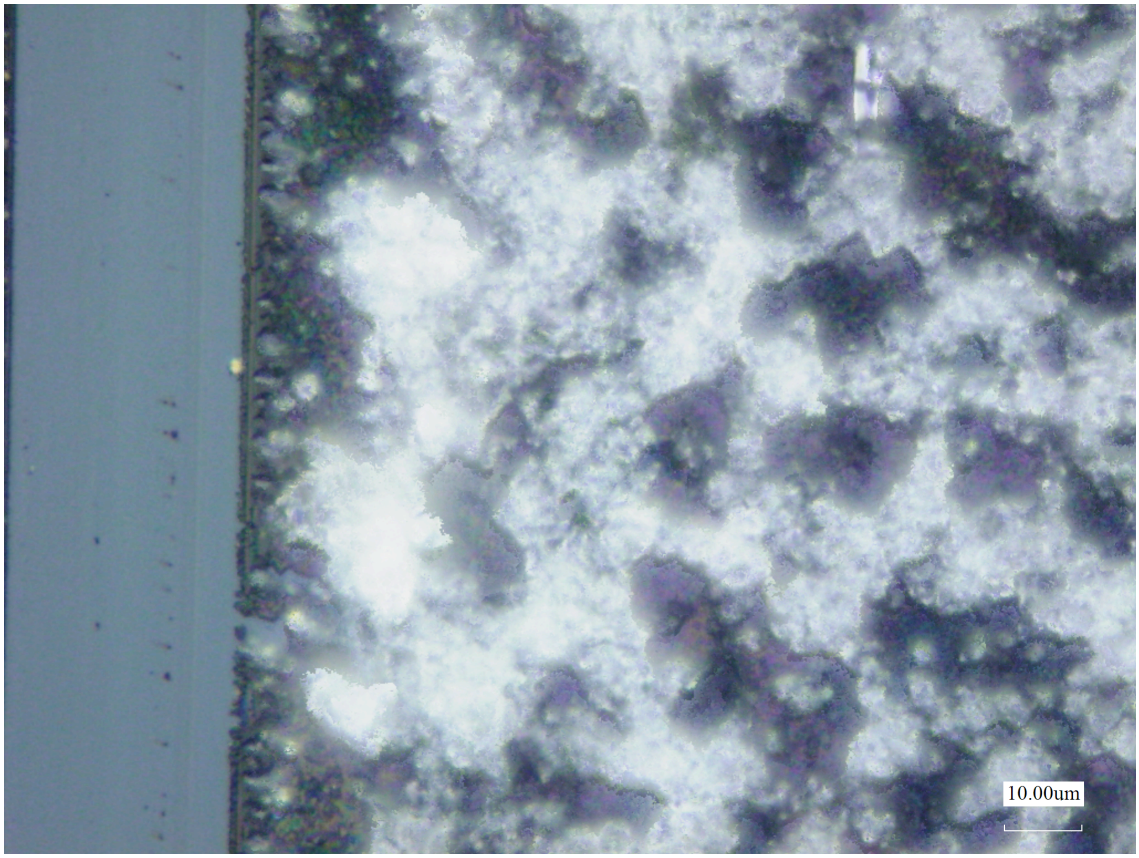
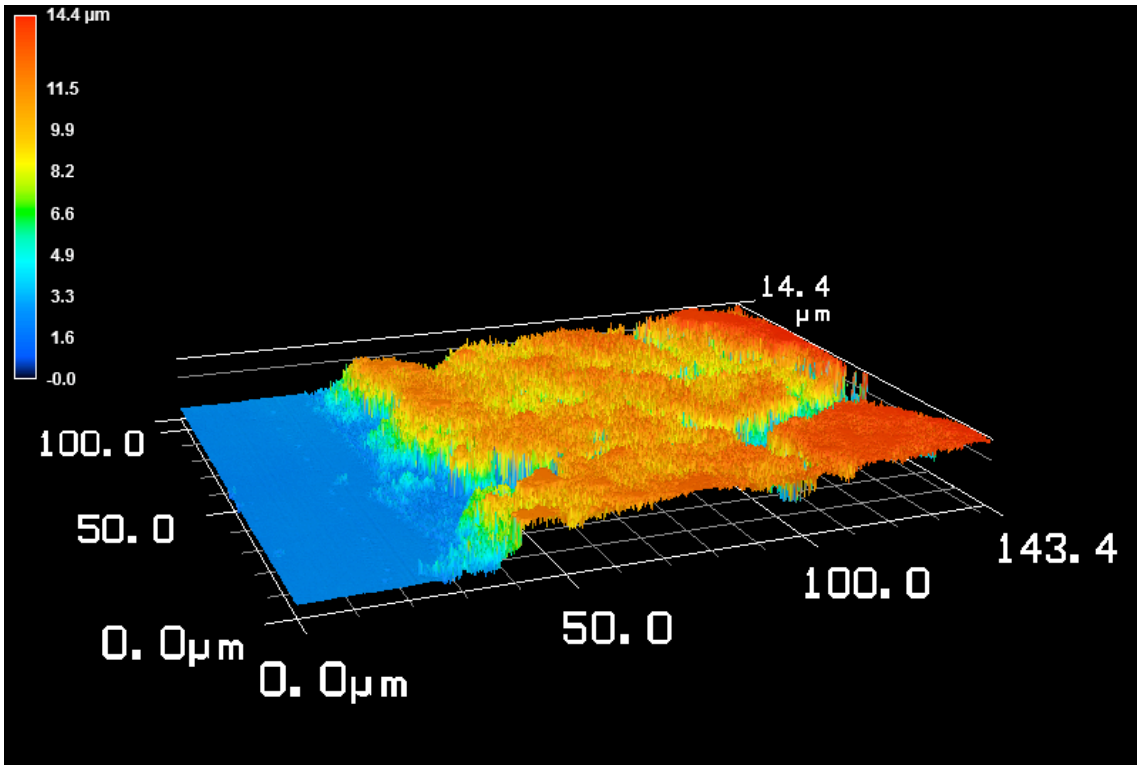


Figure S3 Laser scanning microscope images of a EuS amorphous thin film before heat-treatment at 300 °C.



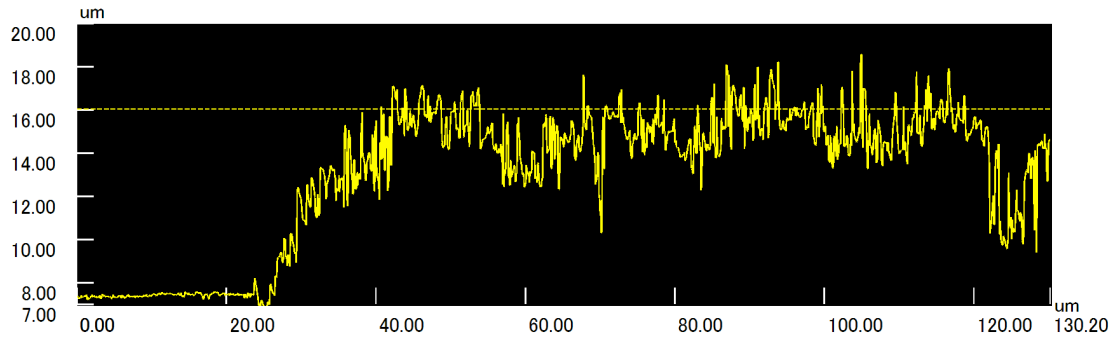


Figure S4 Three dimensional images of a EuS amorphous thin film before heat-treatment at 300 °C using laser scanning microscope.

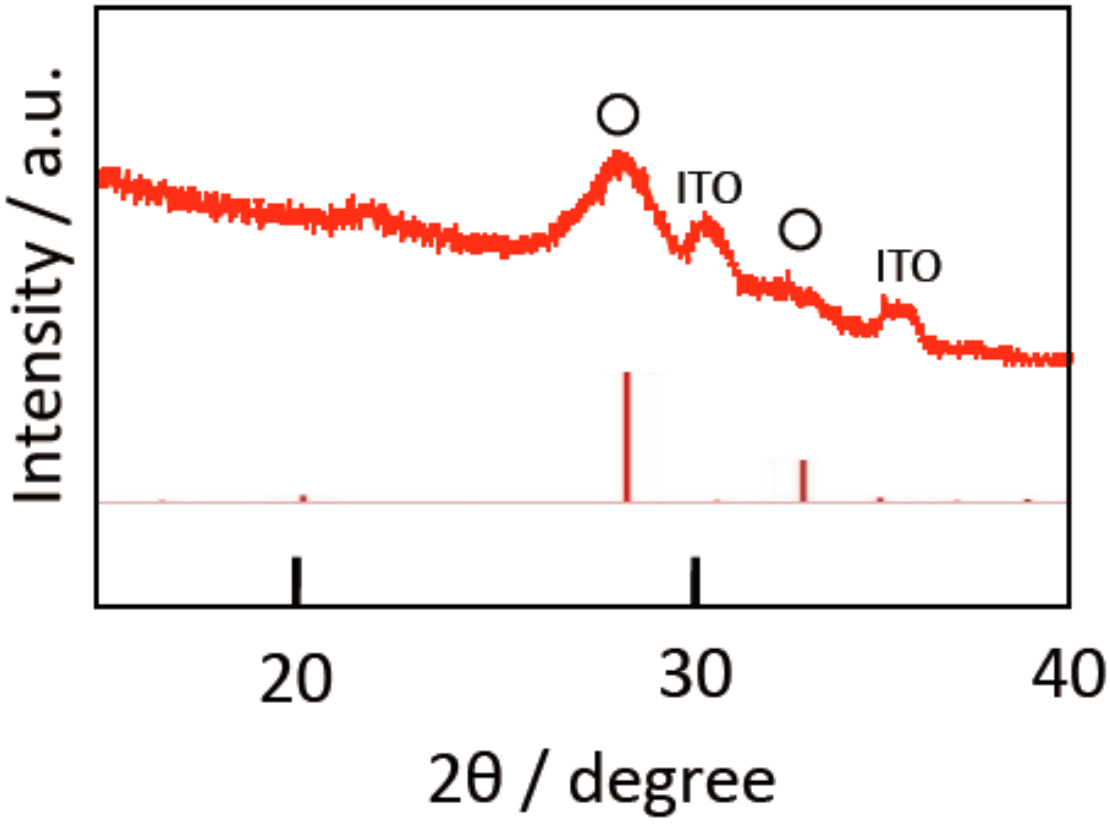


Figure S5　XRD profile of a thin film after heat-treatment at 400 °C.