

Fabrication of MoS₂ QD-AuNP Modified Screen Printed Electrode for the improved electrochemical detection of cefixime

Pinky Sagar^{ψ,#}, Monika Srivastava^{φ,#}, Rajiv Prakash^φ S. K. Srivastava^{ψ*}

^ψDepartment of Physics, Institute of Science, Banaras Hindu University, Varanasi, 221005, India.

^φSchool of Materials Science and Technology, IIT (BHU) Varanasi, India- 221005

equally contributed author

*Corresponding Author's Email address: sanjay_itbhu@yahoo.com

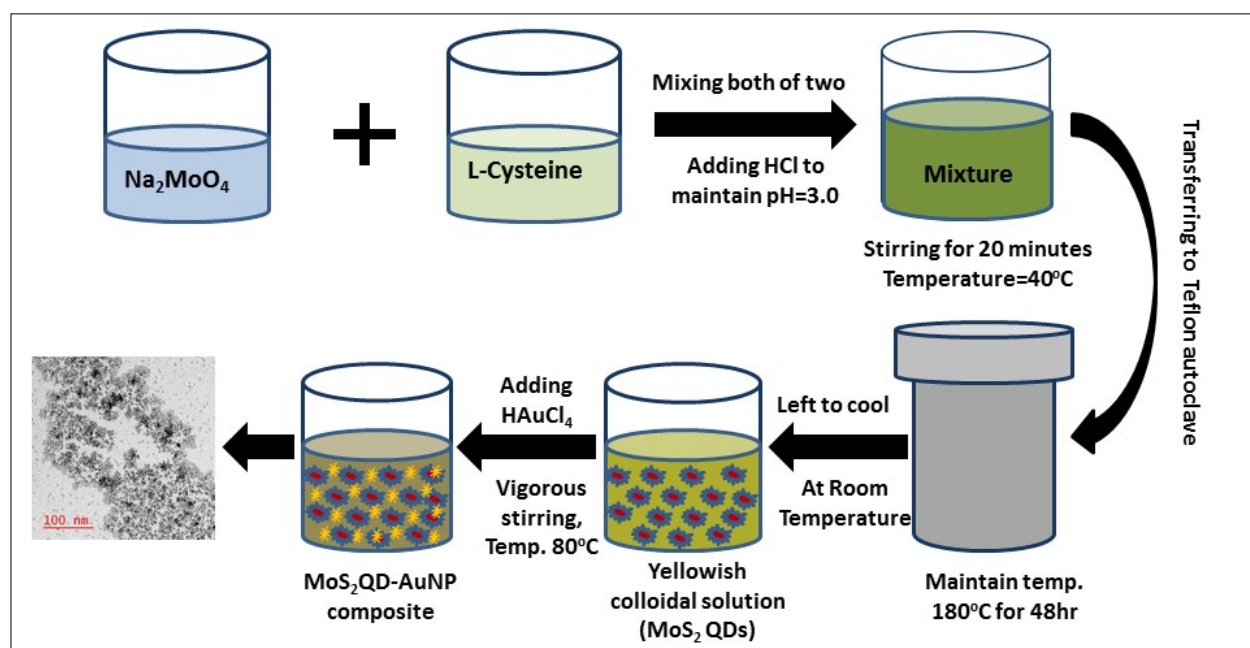


Fig.S1. Schematic presentation of the synthesis of MoS₂ QDs and MoS₂ QD-AuNP composite.

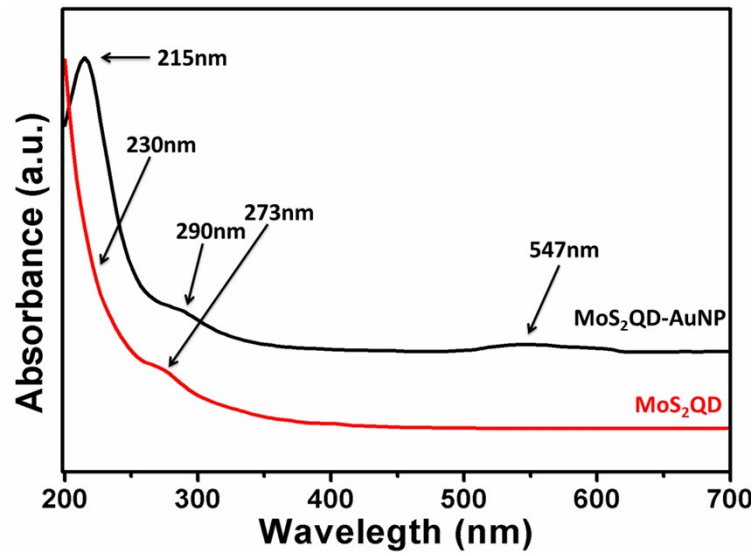


Fig.S2. UV-Visible Spectrum of MoS₂ QDs and MoS₂ QD-AuNP composite.

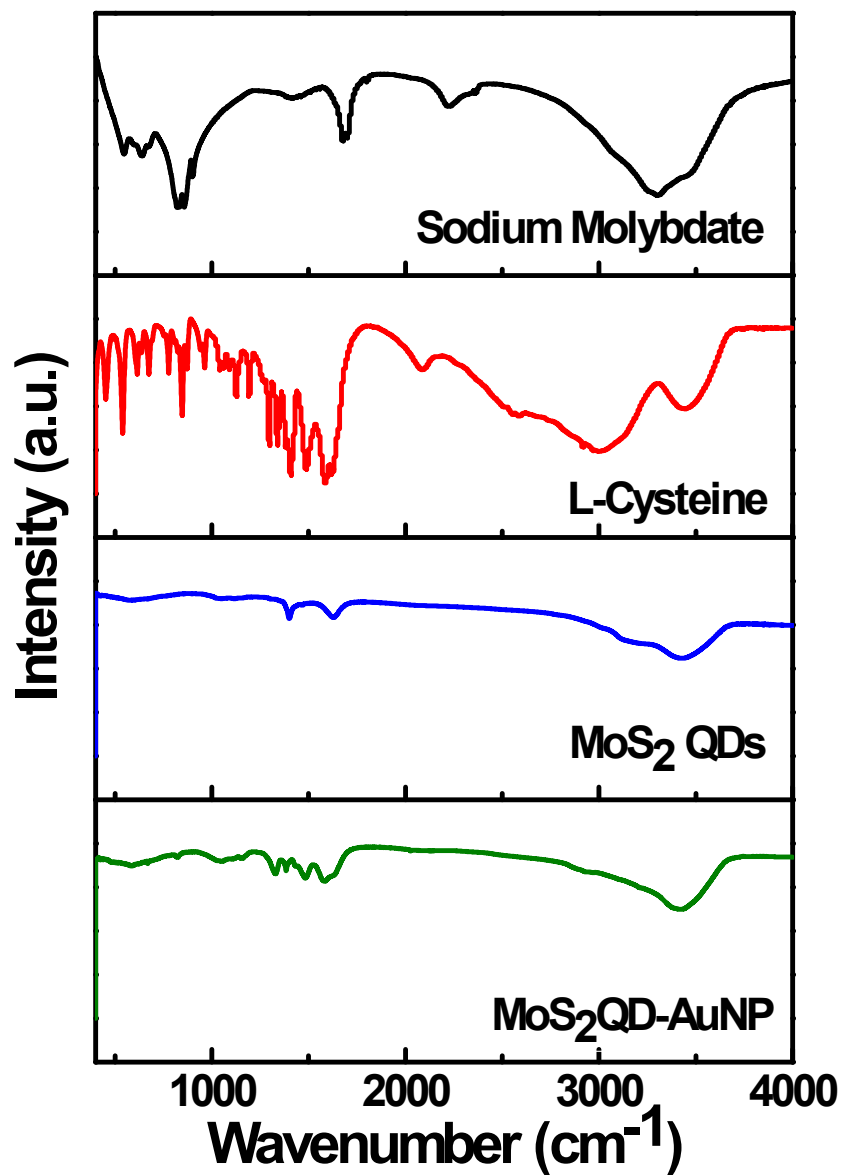


Fig.S3. FTIR Spectrum of MoS₂ QDs , MoS₂ QD-AuNP composite with L-cysteine and Sodium Molybdate precursor.

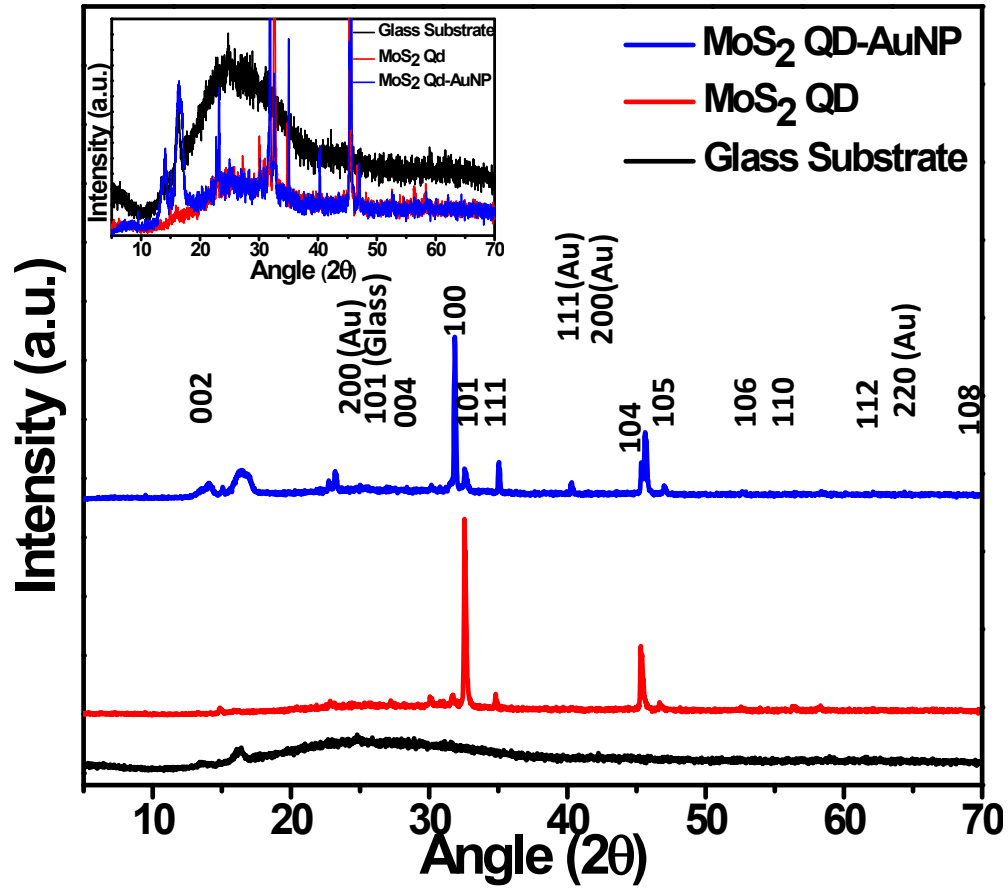


Fig.S4. Shows the XRD pattern of the prepared MoS₂ QDs and MoS₂ QD-AuNP composite and Glass substrate.

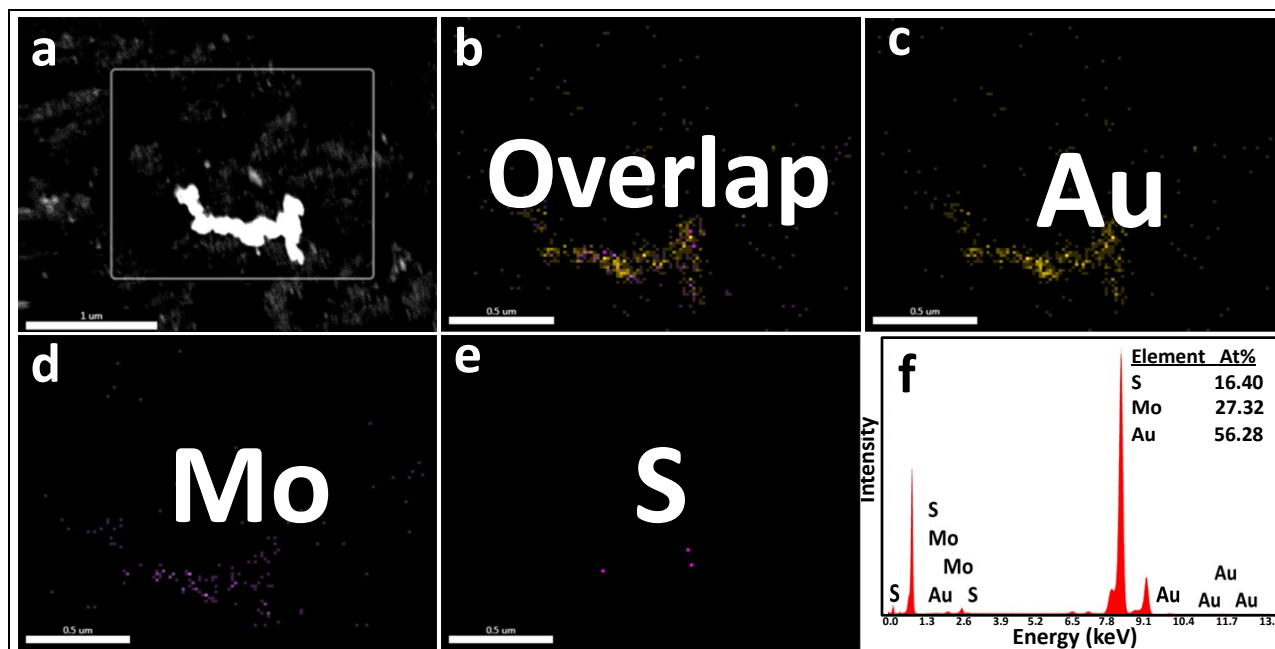


Fig.S5. EDAX mapping for MoS₂ QD-AuNP composite (scale bar 1 μm) (a) TEM image of the area to be analyzed (scale bar 1 μm), (b) overlap (scale bar 0.5 μm), (c) Au element (scale bar 0.5 μm), (d) Mo element (scale bar 0.5 μm) (e) S element (scale bar 0.5 μm) and (f) Spot profile of EDAX analysis of composition of elements.

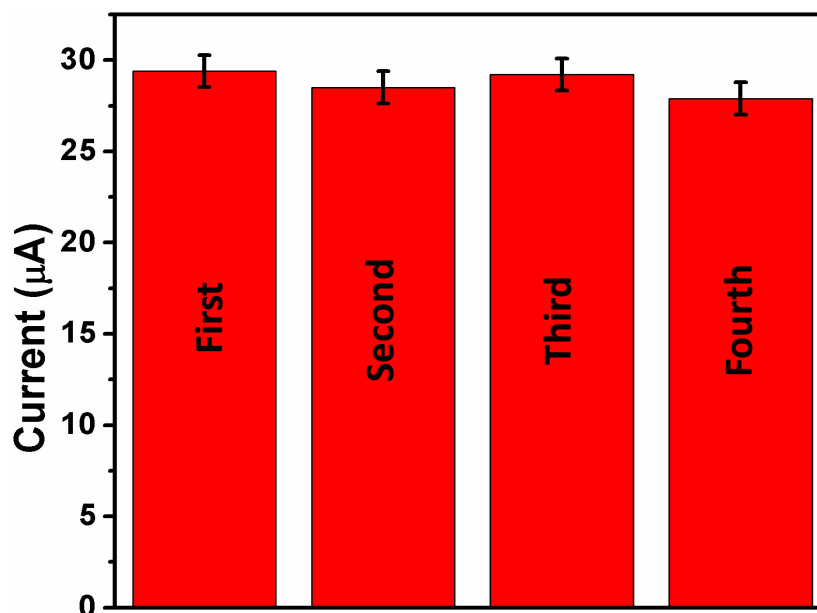


Fig. S6. Reproducibility test of MoS₂ QD-AuNP modified electrode by voltammetric detection in the presence of 50 μM of Cefixime at pH=8 and in 0.1M phosphate buffer.