

## Colloidal Stabilization of Hydrophobic InSe 2D Nanosheets in a Model Environmental Aqueous Solution and their Impact on *Shewanella oneidensis* MR-1

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### **Electronic SI**

Some characterization of InSe nanomaterials are shown in the supporting information document. Figure S1 shows the dynamic light scattering (DLS) size measurement of unmodified versus EGCG-modified InSe nanosheets. A slight increase in the size of the InSe-EGCG nanosheets indicates the formation of a stable coating of EGCG on the InSe surface. DLS measurements were carried out using a Malvern Nano Zetasizer ZEN3600 instrument. The samples were the same as the ones used for UV-vis measurements performed using a glass cuvette.

Figure S2 compares scanning electron microscopy with energy dispersive X-ray analysis (SEM-EDX) spectra of unmodified InSe nanosheets and EGCG-coated InSe nanosheets, both showing the elemental presence of In and Se. The samples were imaged with a FEI Nova NanoSEM 450 with an EDS detector (X-Max 50, Oxford Instruments). Sample preparation for SEM-EDX was done by placing the sample powders on double-sided carbon tape on an aluminum sample stub.

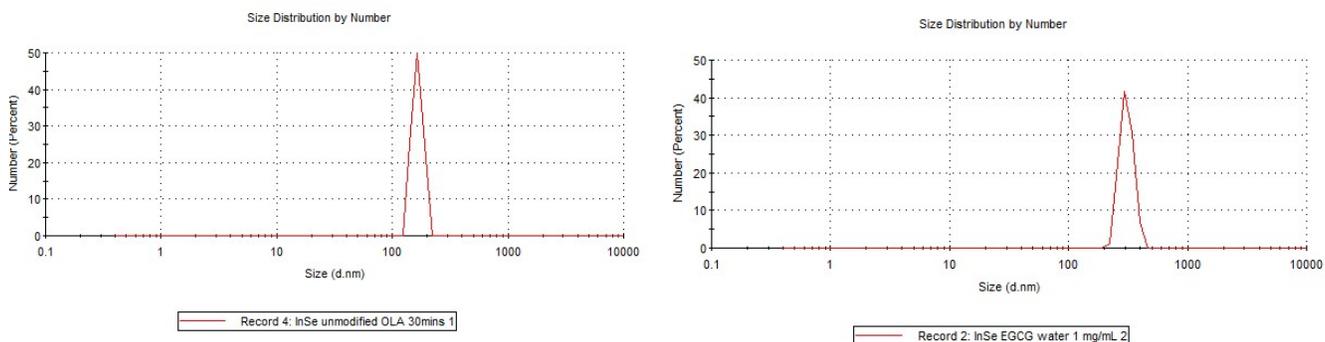


Figure S1: DLS size measurements of unmodified InSe nanosheets (left) versus EGCG-modified InSe nanosheets (right). There is a slight increase in size for InSe-EGCG nanosheets.

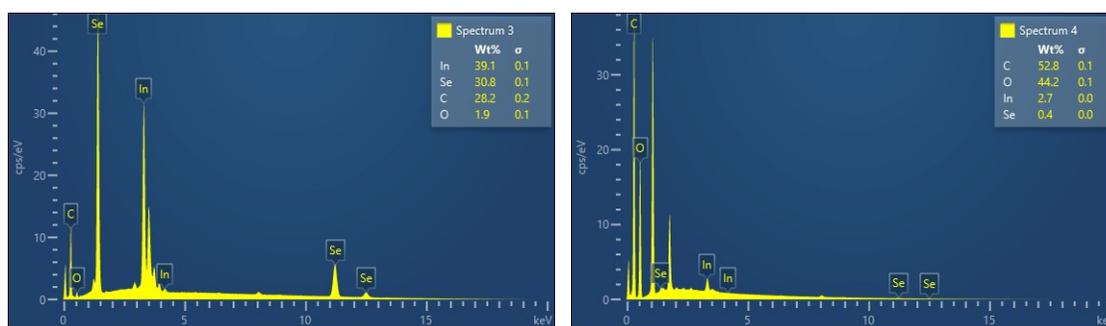


Figure S2: SEM-EDX analysis spectra of unmodified InSe nanosheets (left) versus EGCG-modified InSe nanosheets (right). Both the spectra show the presence of elemental In and Se.