

Supporting Information

Seeing nanoscale electrocatalytic reactions at individual MoS₂ particles under an optical microscope: probing sub-mM oxygen reduction reaction

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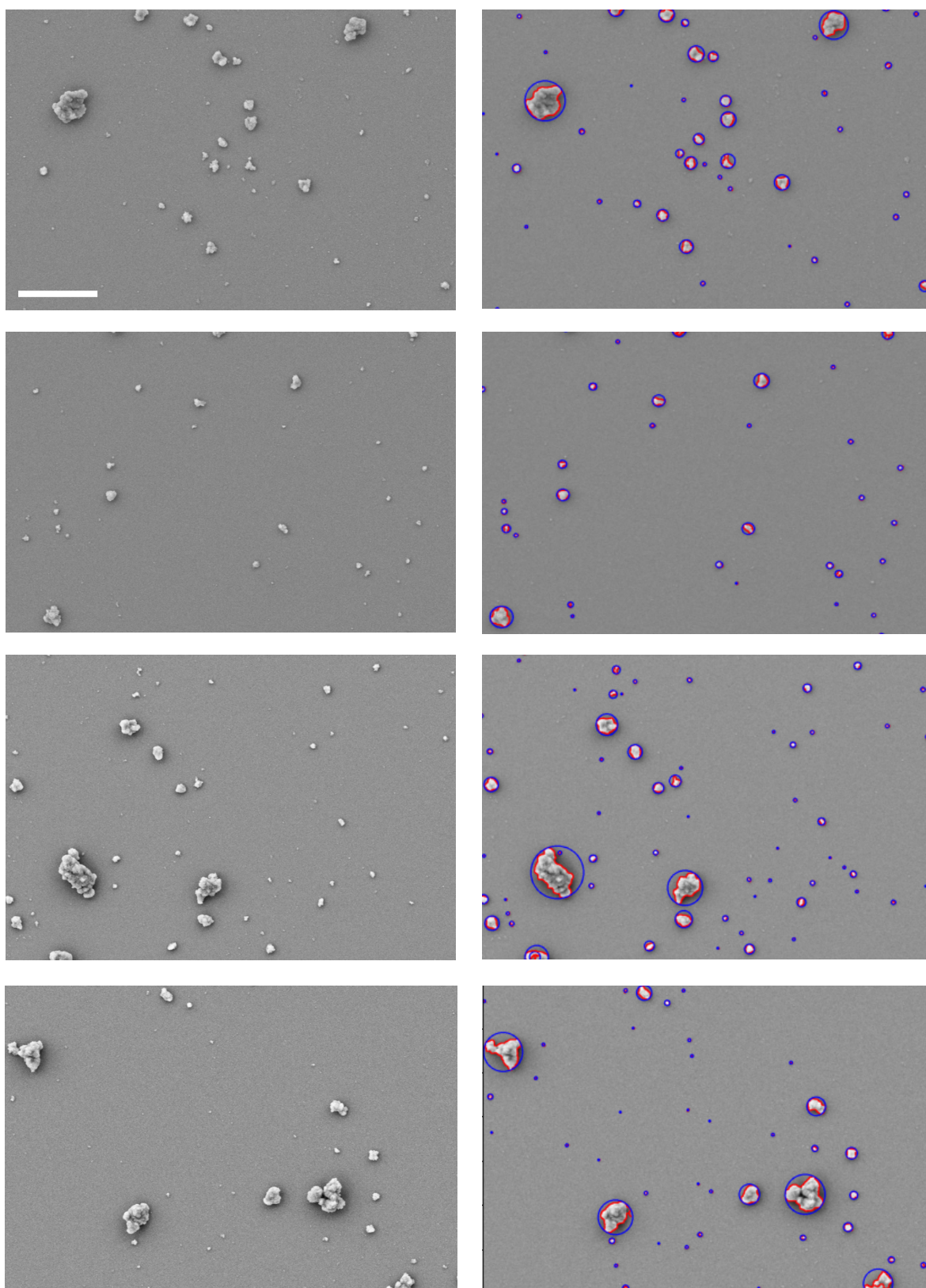


Fig. S1 – Examples of SEM images and the detected particles to calculate the size distribution of the MoS₂ nano- microparticles. (Scale bar: 10 μ m, the shown scale bar applies to all the images)

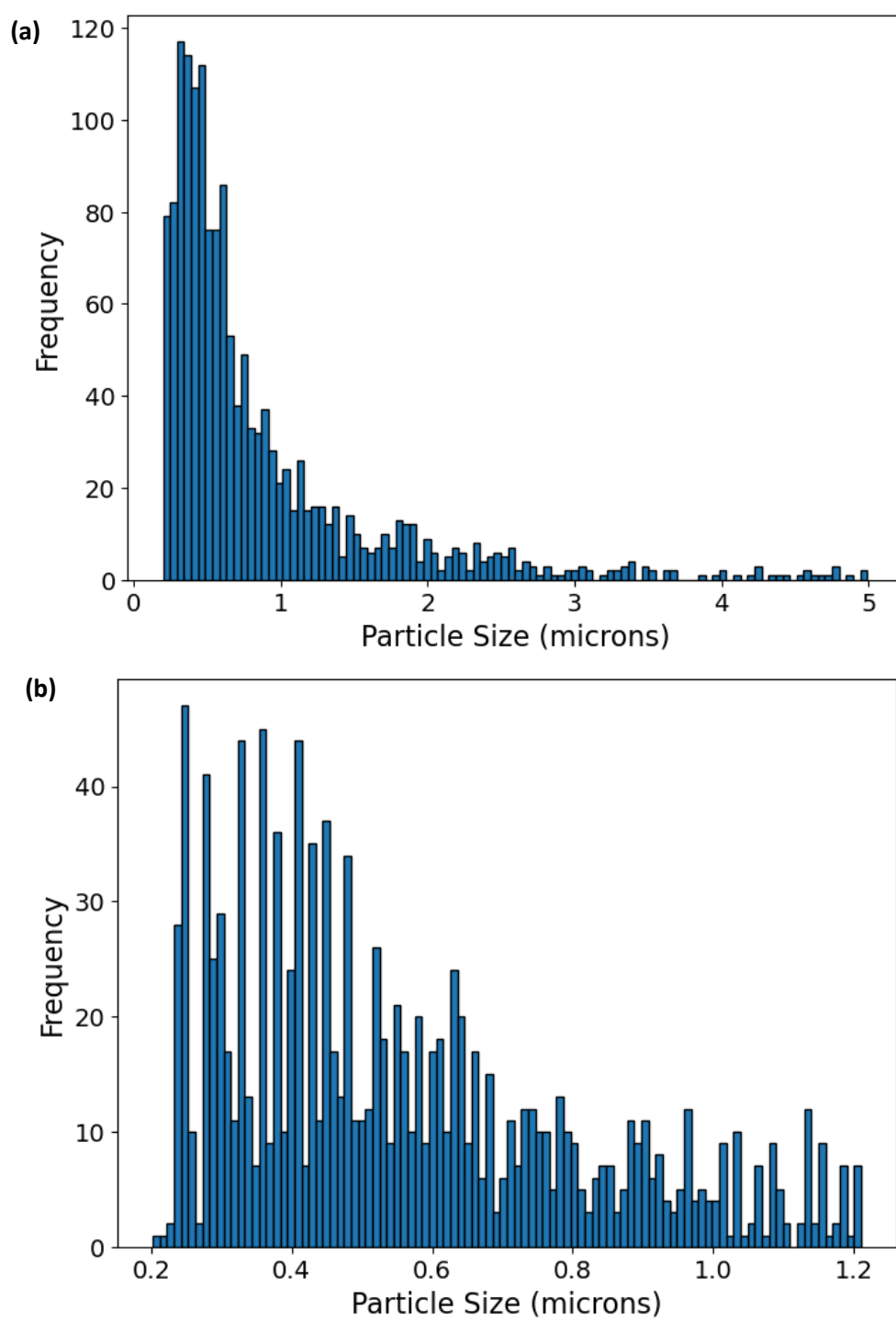
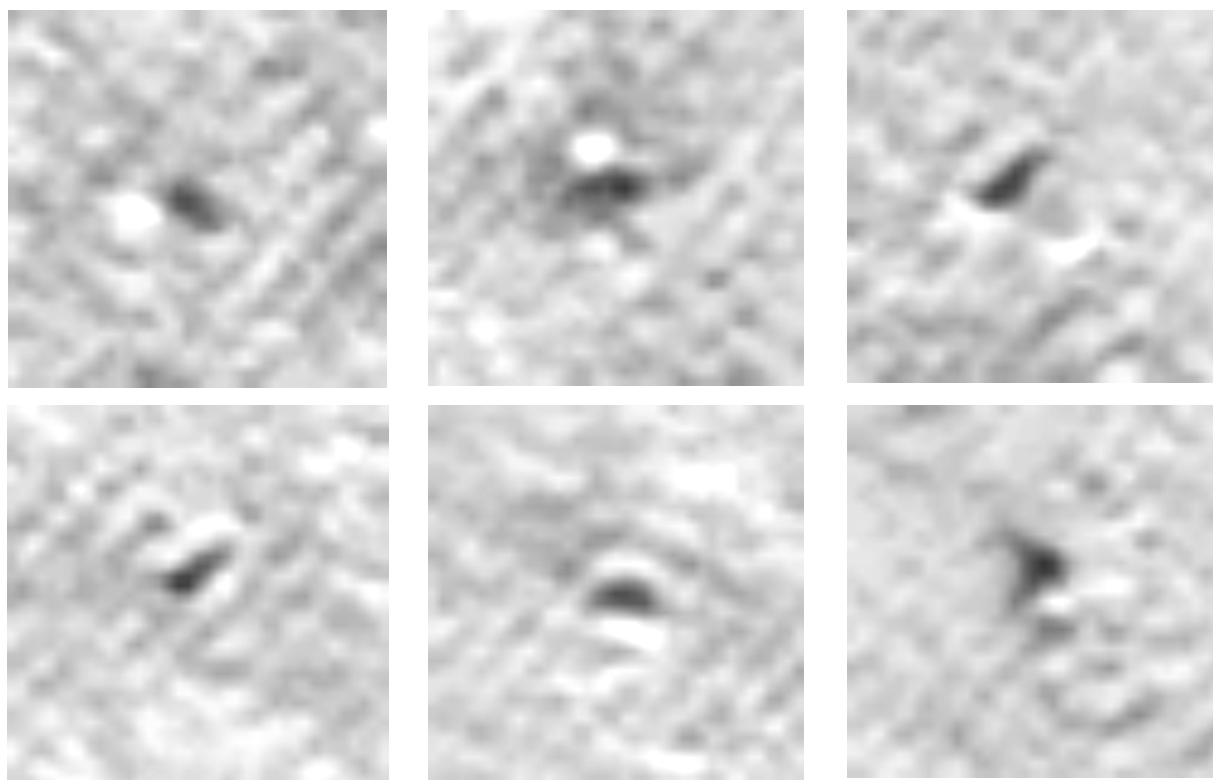


Fig. S2 – (a) Histogram of the size distribution of the MoS₂ particles. (b) Histogram of the 80th percentile of particle size distribution.

(a)



(b)

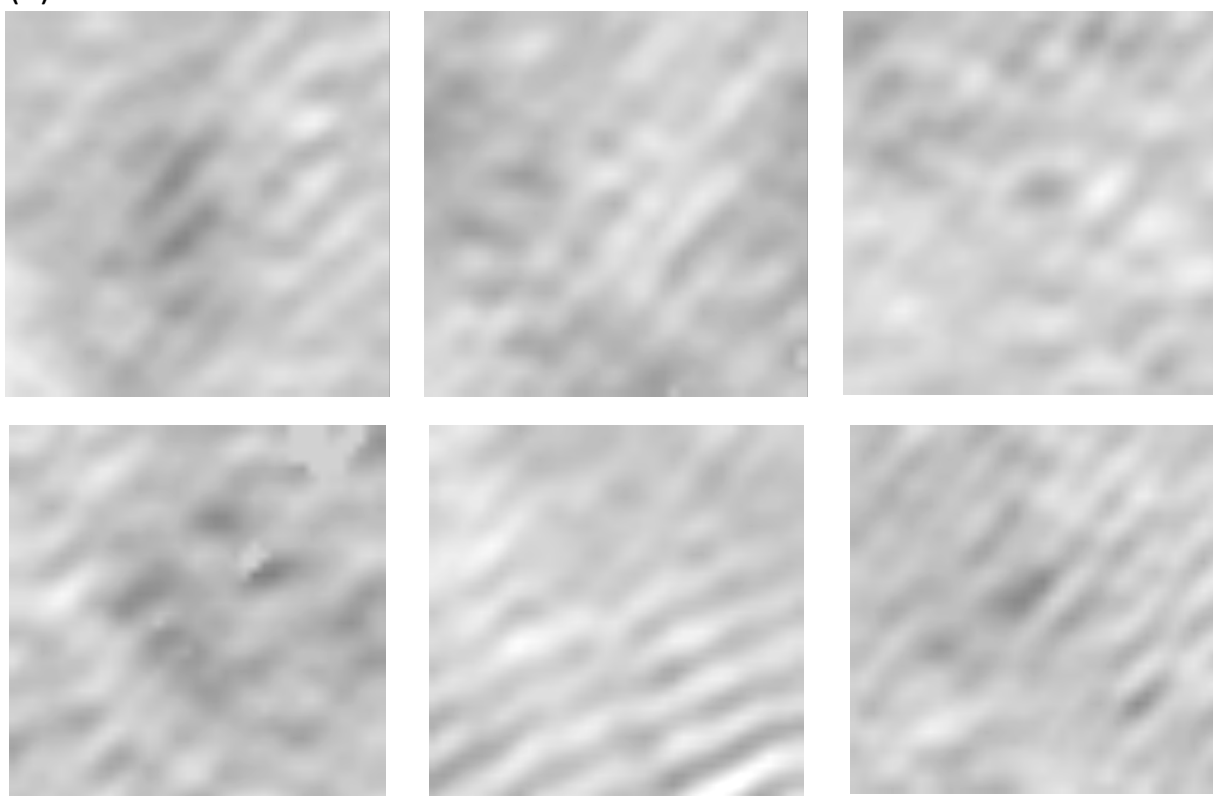


Fig. S3 – Magnified iSCAT images of local regions ($2.4 \times 2.4 \mu\text{m}^2$) after ORR for (a) MoS₂ particles (b) bare ITO.

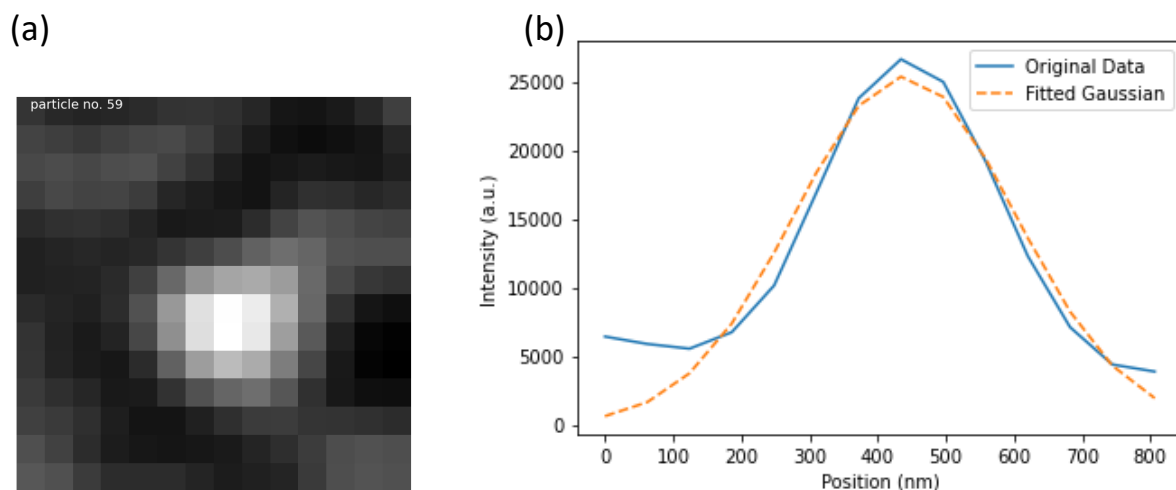


Fig. S4 – Example of (a) a particle detected by optics (the region of interest around the particle is $0.93 \times 0.93 \mu\text{m}^2$), and (b) the Gaussian function fitted to its intensity profile. The FWHM of this fitted function represents the particle size.

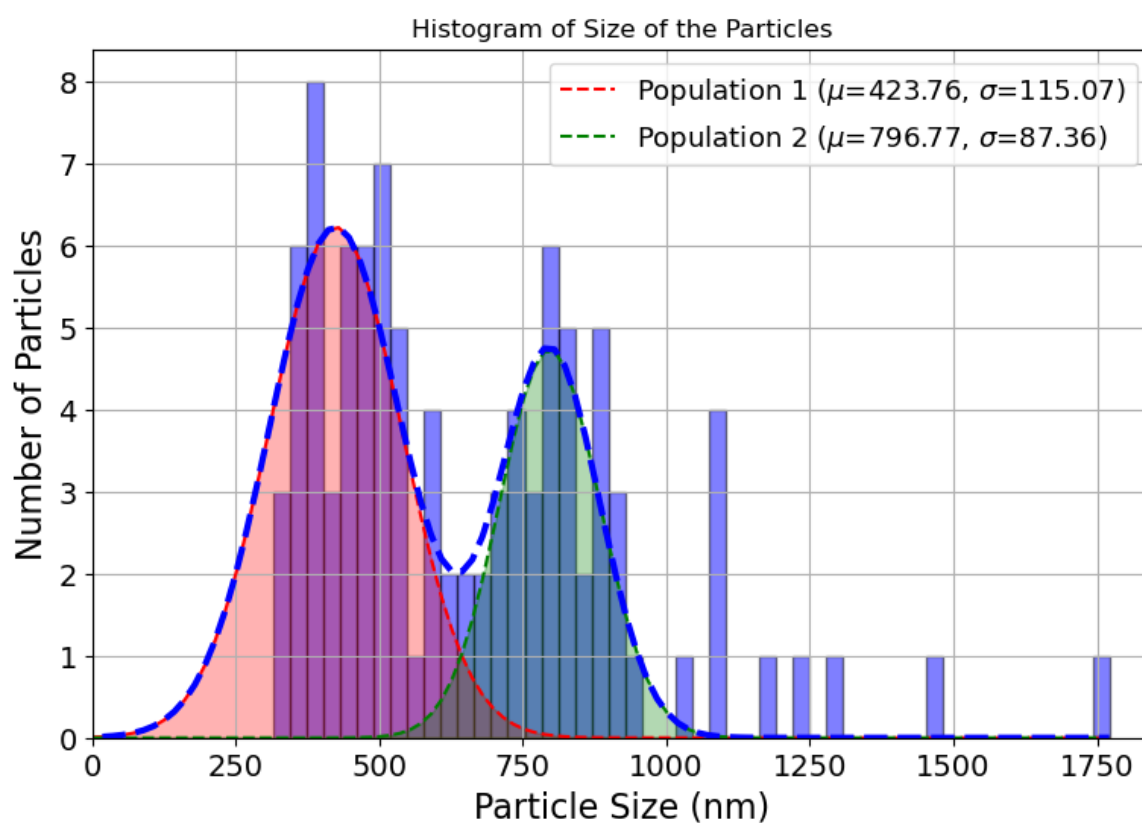


Fig. S5 – The distribution of apparent optical size of particles calculated from the optical image analysis.

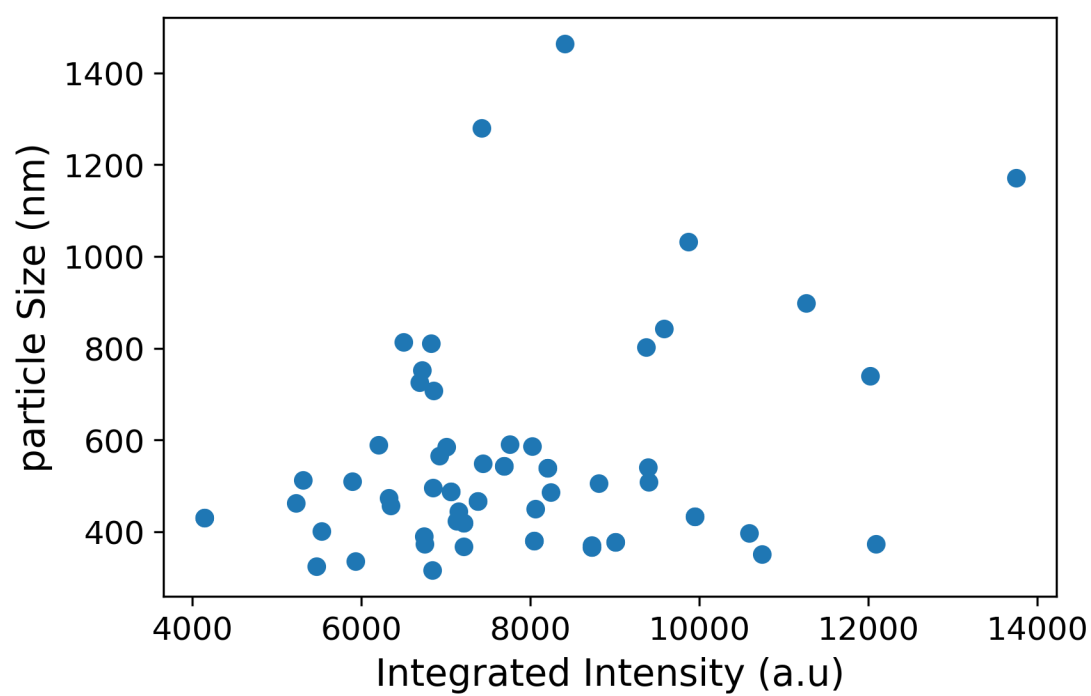


Fig. S6 – Integrated optically intensity (over 15x15 pixels region) of particles vs. apparent optical size of the particles.