

## Electronic Supplementary Information

# Morphology and structure controlled synthesis of ruthenium nanoparticles in oleylamine

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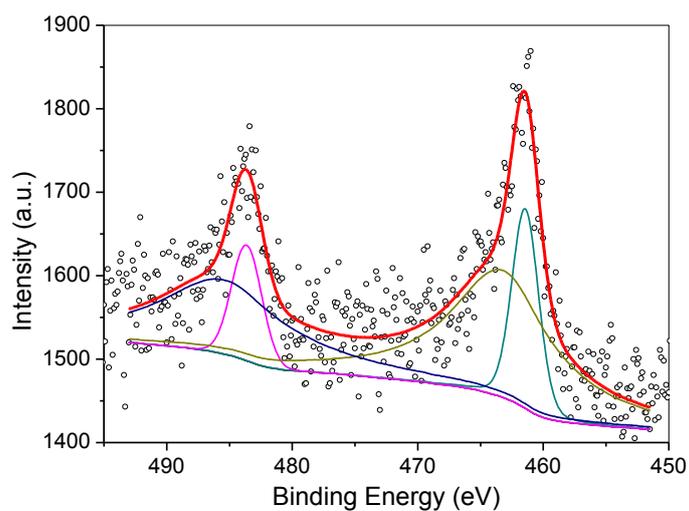
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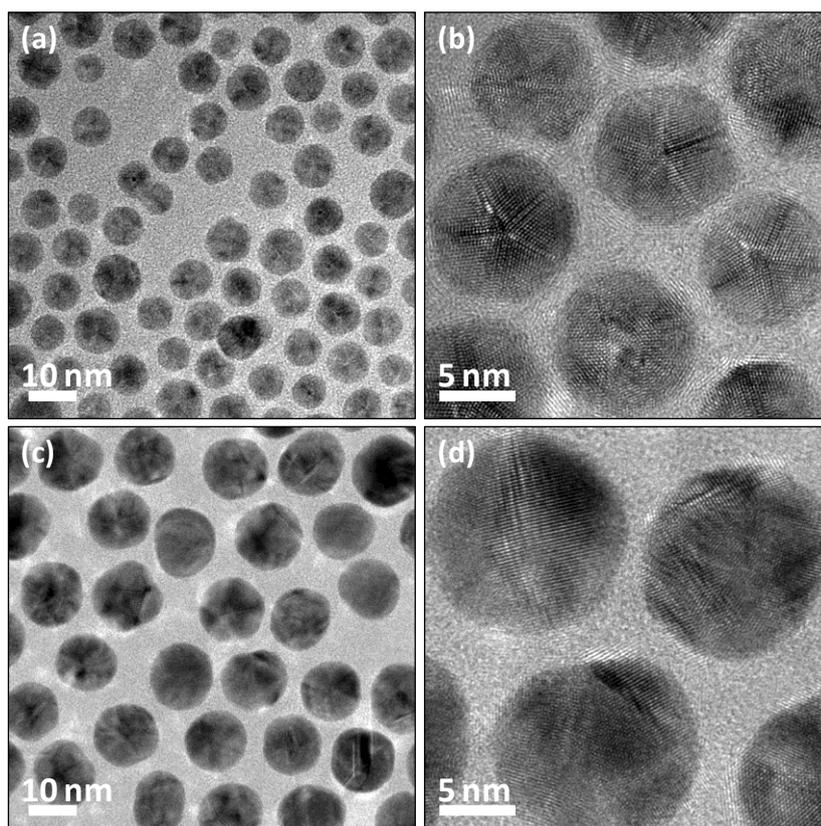
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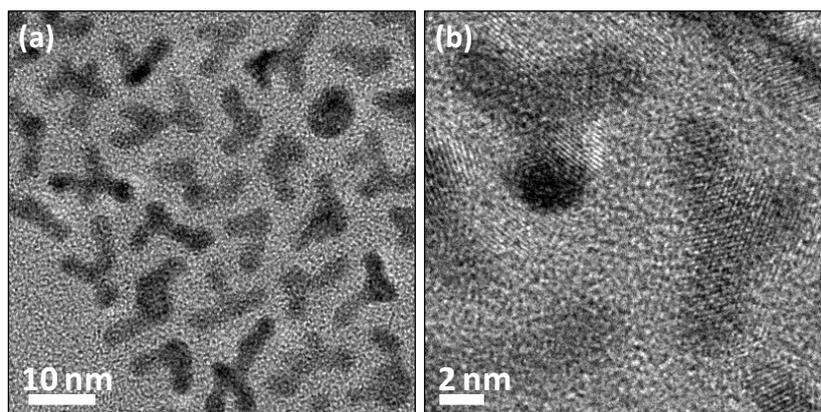
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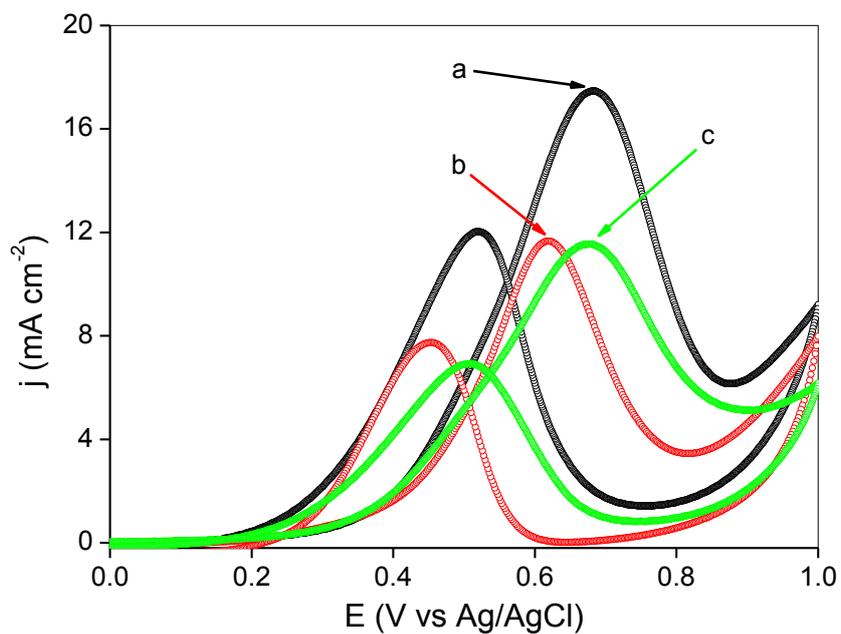
**Fig. S1** 3p XPS spectrum of Ru nanoparticles synthesized directly in oleylamine at 320°C.



**Fig. S2** TEM (a,c) and HRTEM images (b,d) of Ag (a,b) and Au (c,d) seed particles synthesized in oleylamine at elevated temperature..



**Fig. S3** TEM (a) and HRTEM image (b) of bimetallic PtRu nanoparticles prepared in oleylamine in the absence of Au seed particles.



**Fig. S4** Cyclic voltammograms of Au-PtRu nanodendrites (a), physical mixture of PtRu multipods and Au nanoparticles (b), and PtRu multipods (c) as-prepared in oleylamine in argon-purged HClO<sub>4</sub> (0.1 M) with methanol (1 M).