

High-yield synthesis of selenium nanowires in water at room temperature

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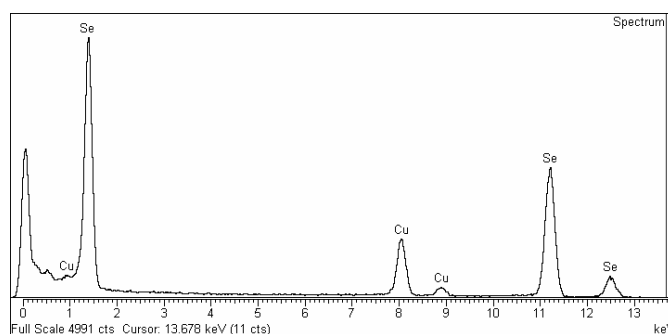
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1. Instrumentation

XRD was carried out by using a Philips PW1877 powder diffractometer with Cu K α radiation ($\lambda = 1.54056 \text{ \AA}$). The Raman spectra were recorded using a 50.0 mW excitation line at 514.0 nm on a Renishaw Raman Spectrometer (system 2000), and the samples were prepared on glass substrates. SEM was performed on a LEO 1530 field-emission scanning electron microscope (FESEM), while TEM images were recorded on a Tecnai 20 (Philips) transmission electron microscope with an accelerating voltage of 200 kV.

2. EDX spectrum



The corresponding EDX spectrum of t-Se nanowires deposited on a carbon-coated copper grid.

3. FESEM taken at various stages of the reaction

FESEM images showing a) the formation of spherical a-Se colloids immediately after mixing of the reagents; b) the clustering of a-Se into larger aggregates after 1 h; c) the formation of irregular wire-like a-Se after 4 h; d) small t-Se nanowires generated randomly on the surface of a-Se after aging in ethanol solution for 1 h; e) the as-prepared t-Se nanowires after aging in ethanol for 2 h.

