

# **Supporting information**

## ***In-situ* Atom-resolved Tracing of Element Diffusion in NiAu**

### **Nanospindles**

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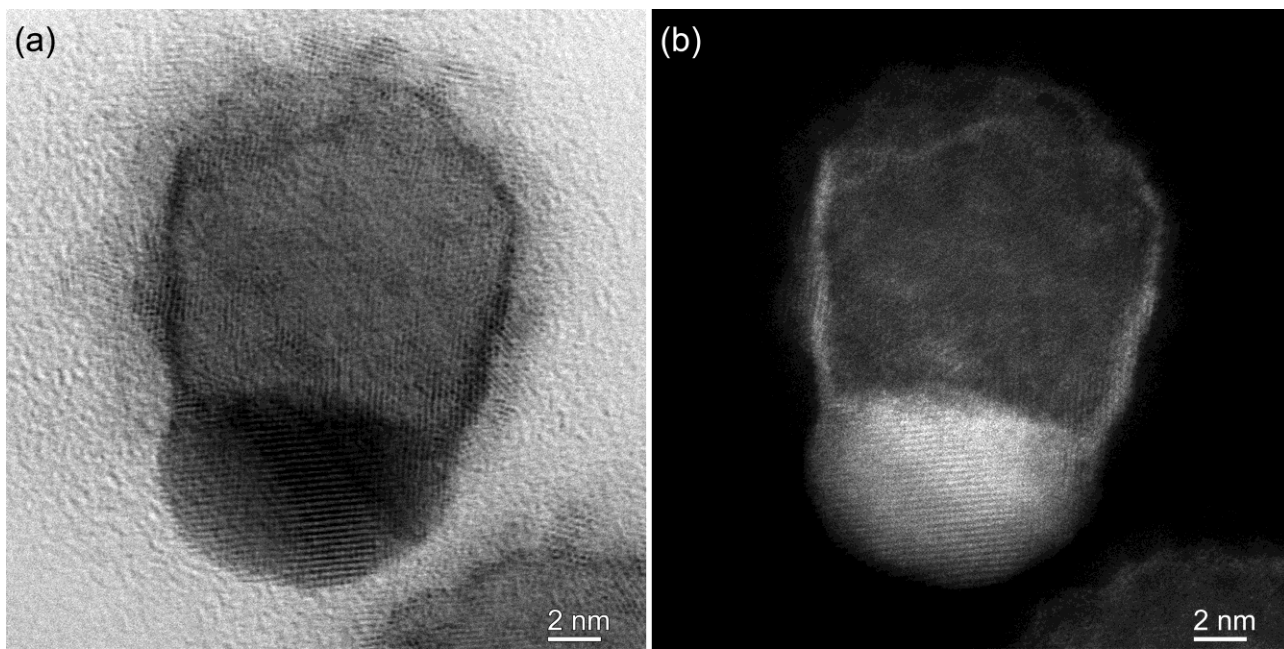
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## Supplementary Figures

**Figure S1:** BF-STEM (a) and HAADF-STEM (b) images of the same NiAu spindle after the sample has been exposure in air at room temperature for 85 days. An obvious diffusion of Au atoms onto the surfaces of Ni matrix could be observed.



**Figure S2:** HAADF images of NiAu spindles after series of in-situ annealing in vacuum. (a) ~ (e) low magnified HAADF images of the same area after having been annealed at different temperatures ( $^{\circ}\text{C}$ ) and durations (min); (f) high magnified HAADF image of the individual nanostructure after annealed at  $400^{\circ}\text{C}$  for 30 min.

