

## ***Electronic Supplementary Information***

### **A colloidally stable water dispersion of Ni nanowires as efficient $T_2$ -MRI contrast agent**

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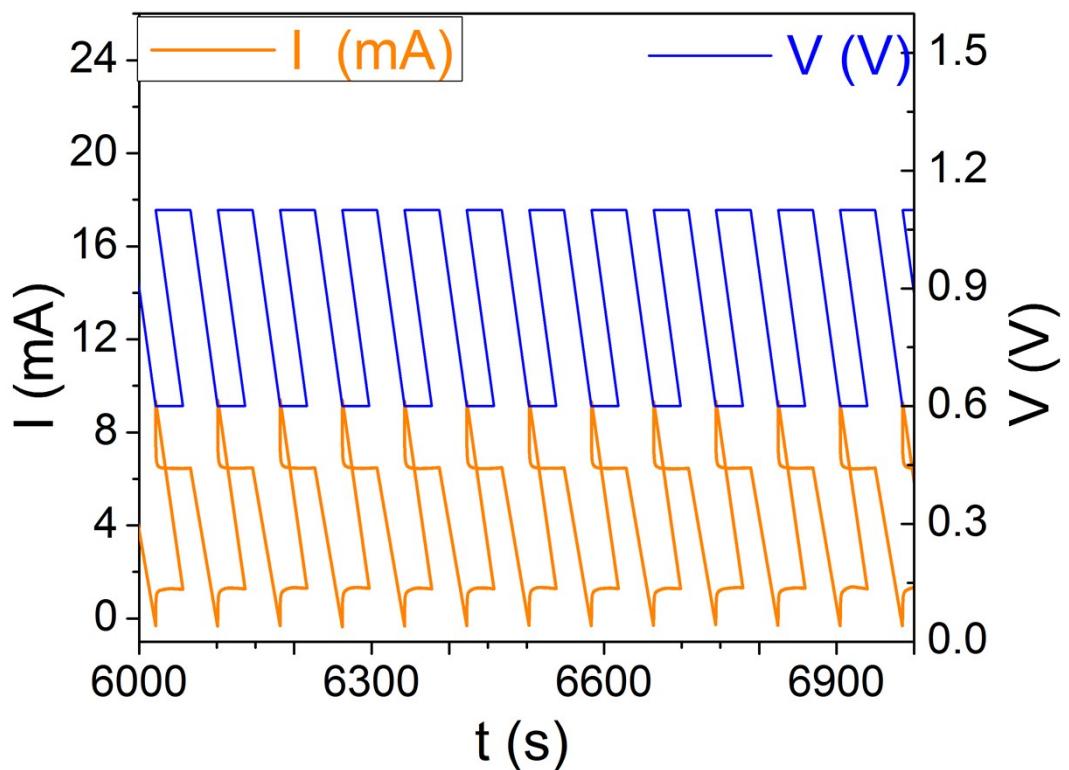
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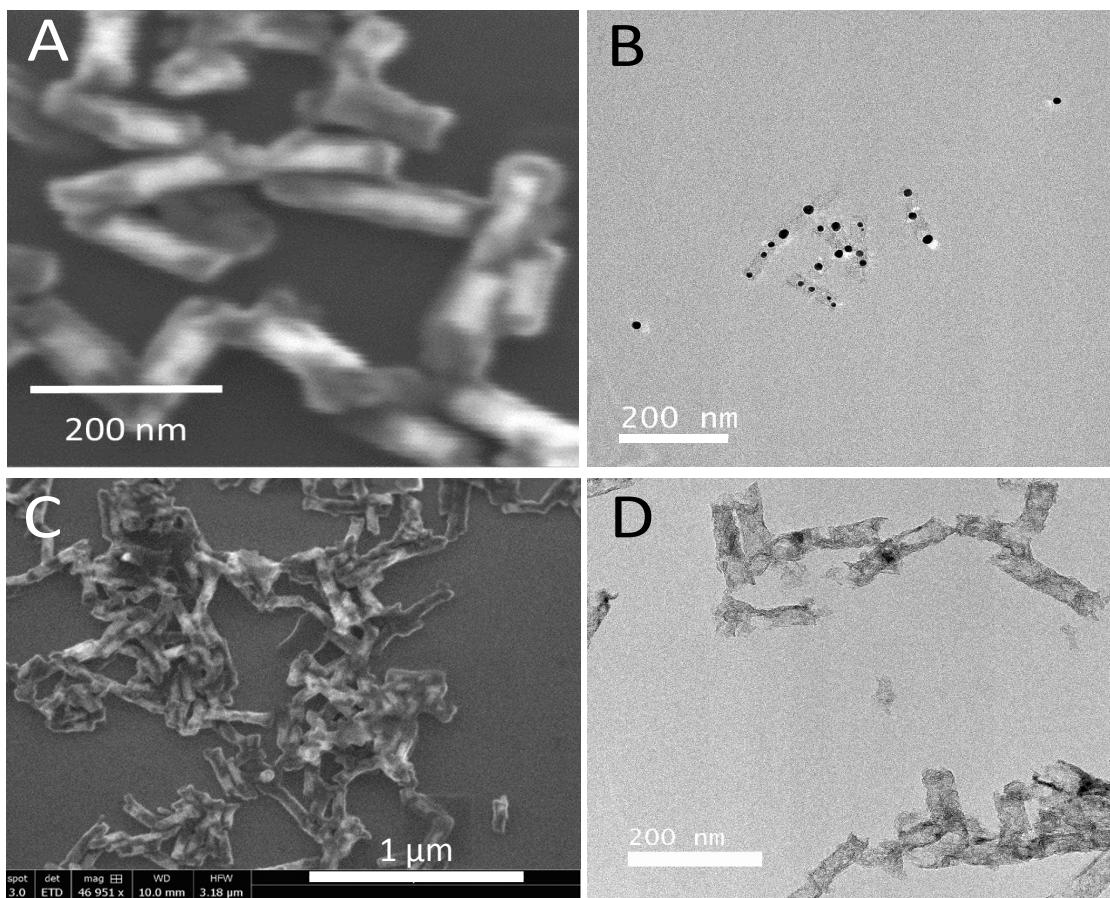
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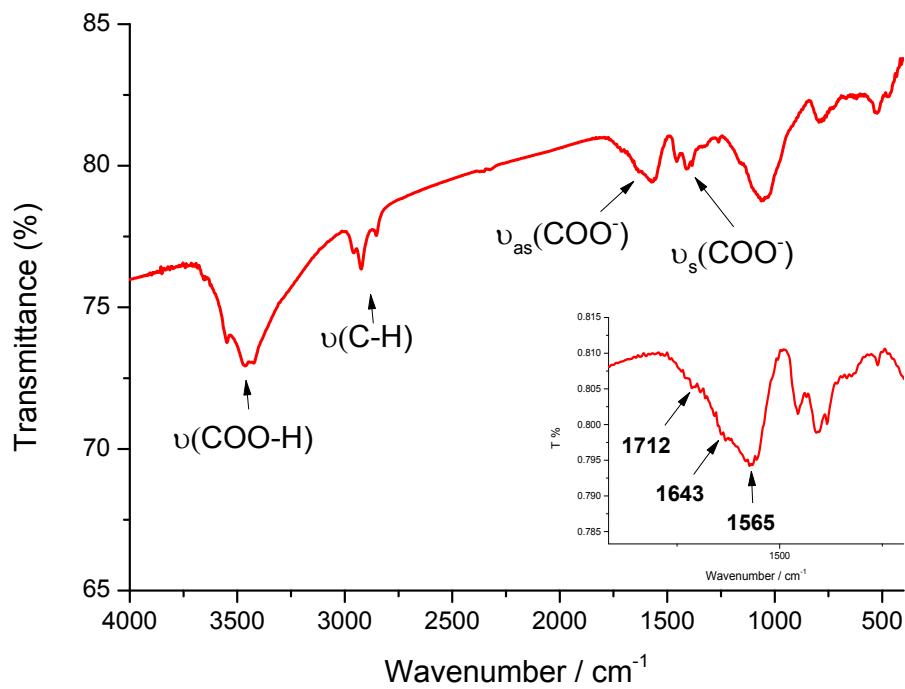
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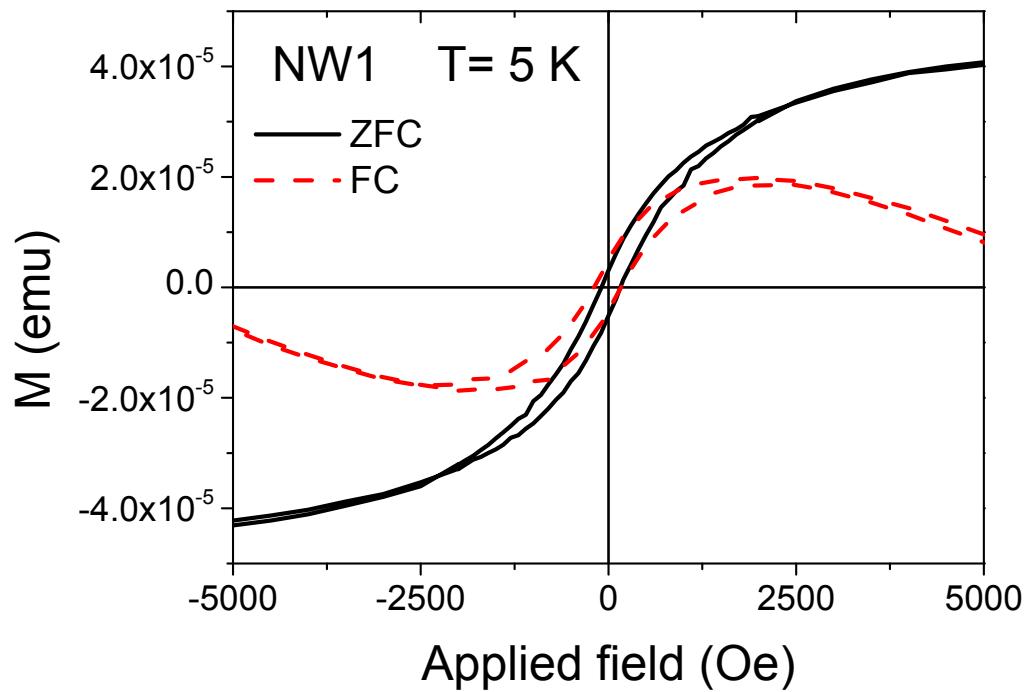
**Figure S1:** Current density profile during the pulsed electrodeposition of Ni/Au multilayer nanowires.



**Figure S2:** A-B: SEM-TEM images of Ni/Au multilayer nanowires (sample NW2) after Au etching under the same conditions as sample NW1 (data showed in the main manuscript). Herein, residual Au segments are still clearly observed. C-D: SEM-TEM images of Ni/Au multilayer nanowires after a more aggressive etching conditions to assure the complete Au removal. It results in Ni nanowires irreversible damaged.



**Figure S3.** FT-IR spectrum of PAA-coated Ni nanowires (sample NW1) showing expected peaks from the polyacrylic coating. Inset, magnification of the carboxylic region of the spectrum.



**Figure S4:** Hysteresis loops in zero-field-cooling and field-cooling (ZFC-FC) conditions of PAA-coated Ni nanowires (sample NW1) at 5K.