

Supporting Information

Synthesis and Characterization of Rare-Earth-Free Magnetic Manganese Bismuth Nanocrystals

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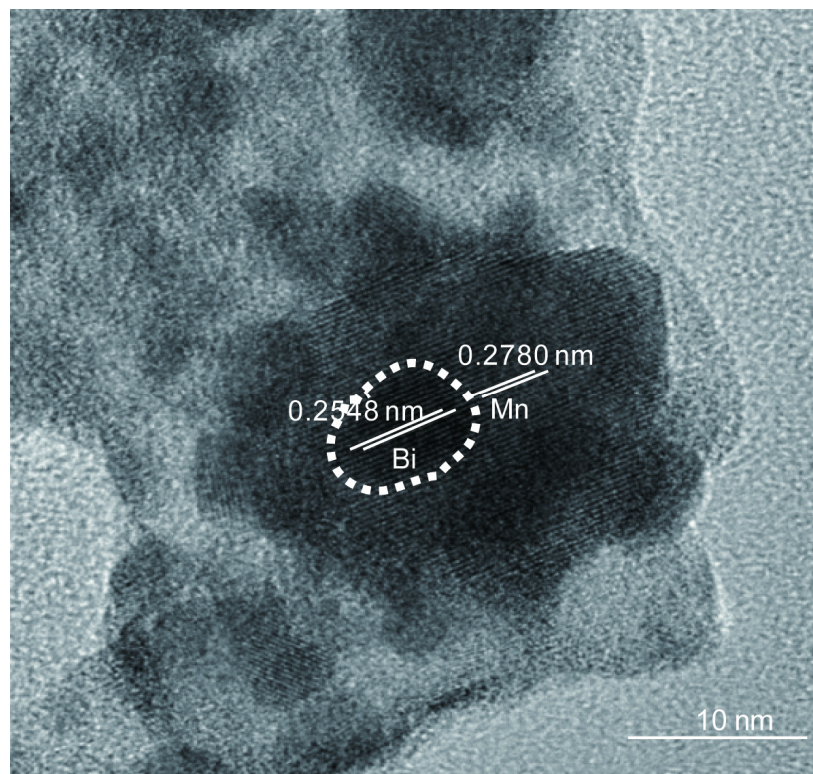


Figure S1 The lattice structure of both Mn and Bi phase of core-shell MnBi ink after 24 hours reaction

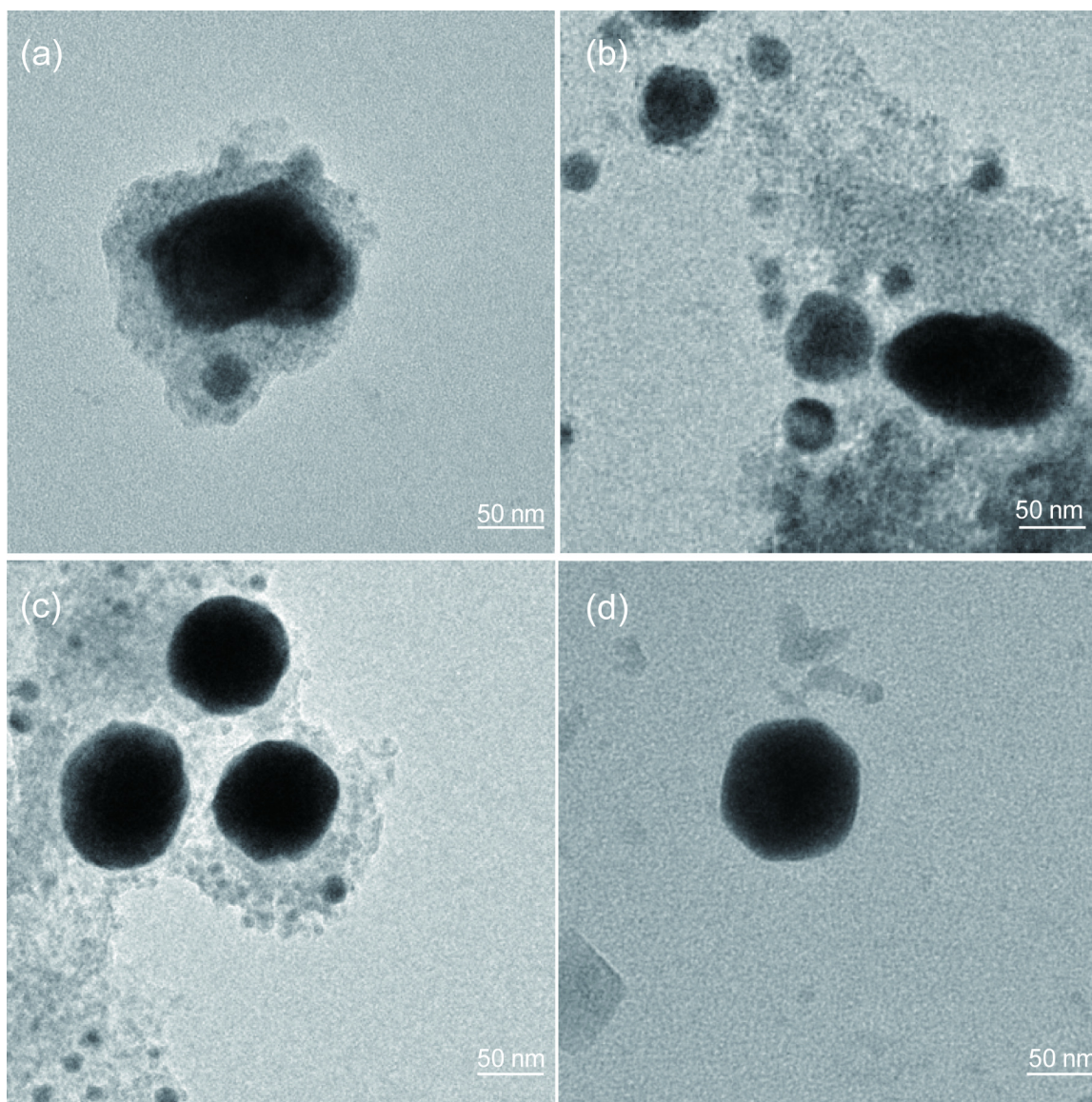


Figure S2. TEM image showing the MnBi core-shell ink with comparative parameters. (a) $\text{Mn}_2(\text{CO})_{10}$, 200°C , (b) $\text{Mn}_2(\text{CO})_{10}$, 260°C , (c) Octadecene, 310°C , (d) Benzyl ether, 200°C .

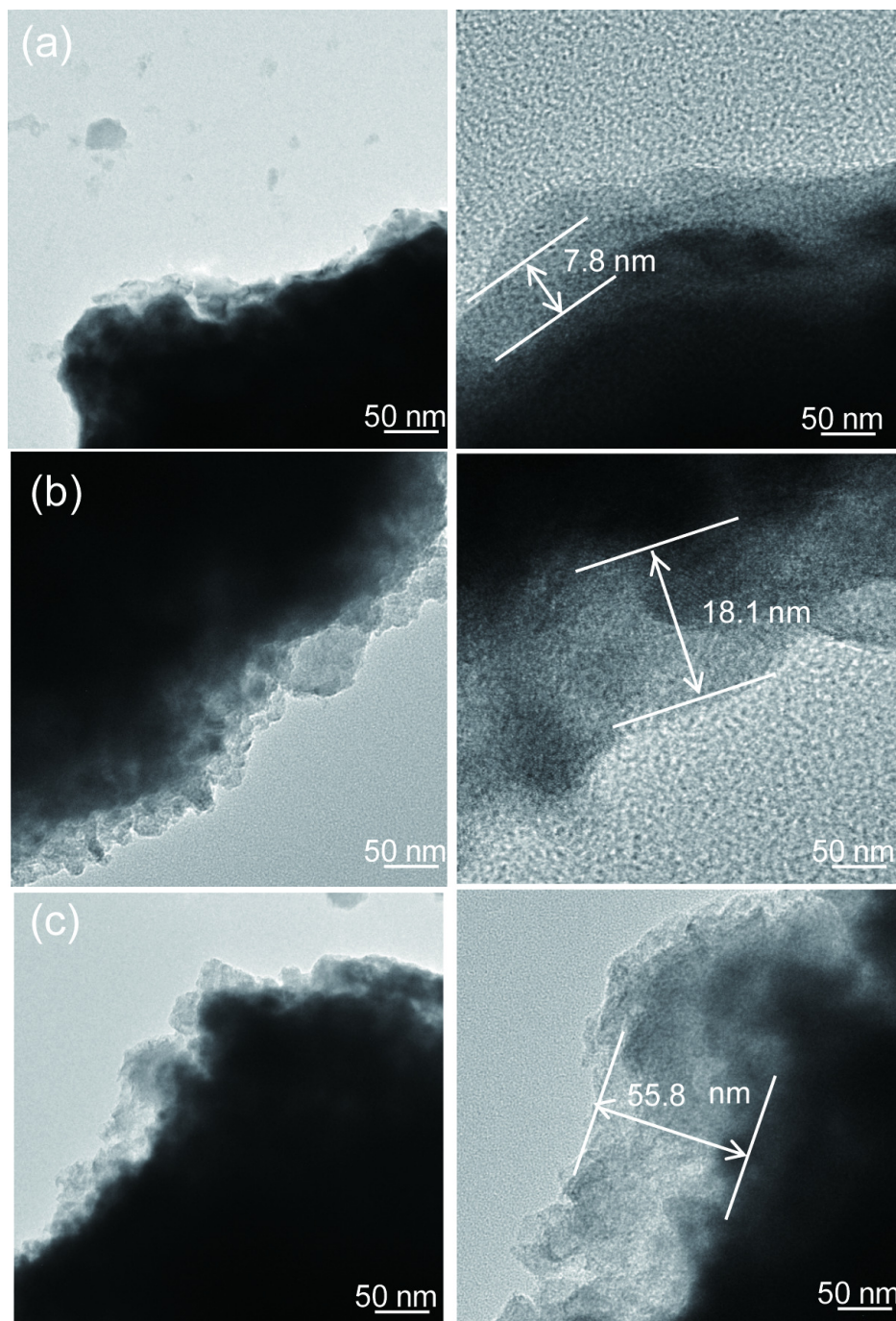


Figure S3. Thickness control of Co shell on MnBi alloy nanocrystals by controlling the reaction temperature for MnBi and $\text{Co}_2(\text{CO})_8$ mixture at (a) 50°C, (b) 100°C, (c) 200°C for low and high resolution TEM images (left and right, respectively).

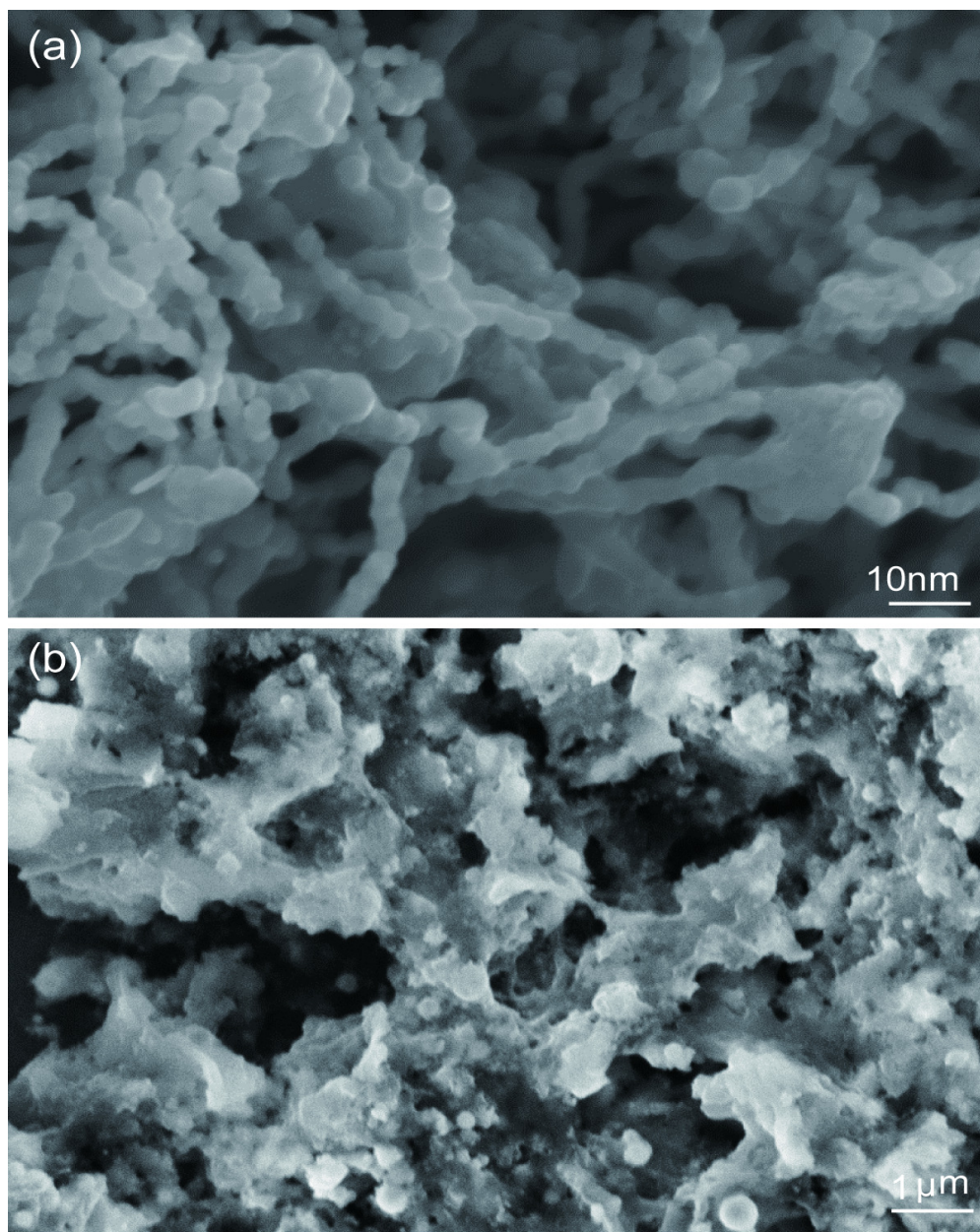


Figure S4. SEM image of (a) cobalt nanowires and (b) MnBi alloy.

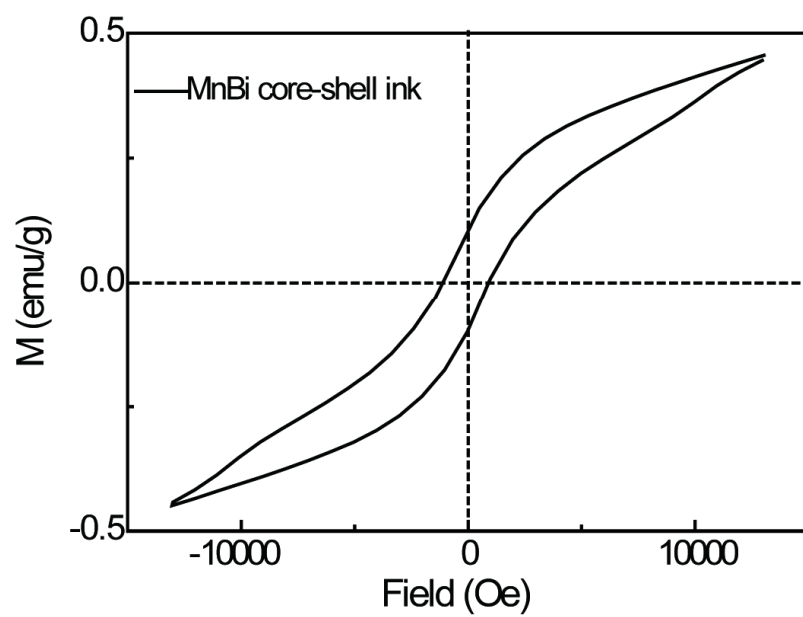


Figure S5. Magnetic hysteresis loop of the MnBi core-shell ink.

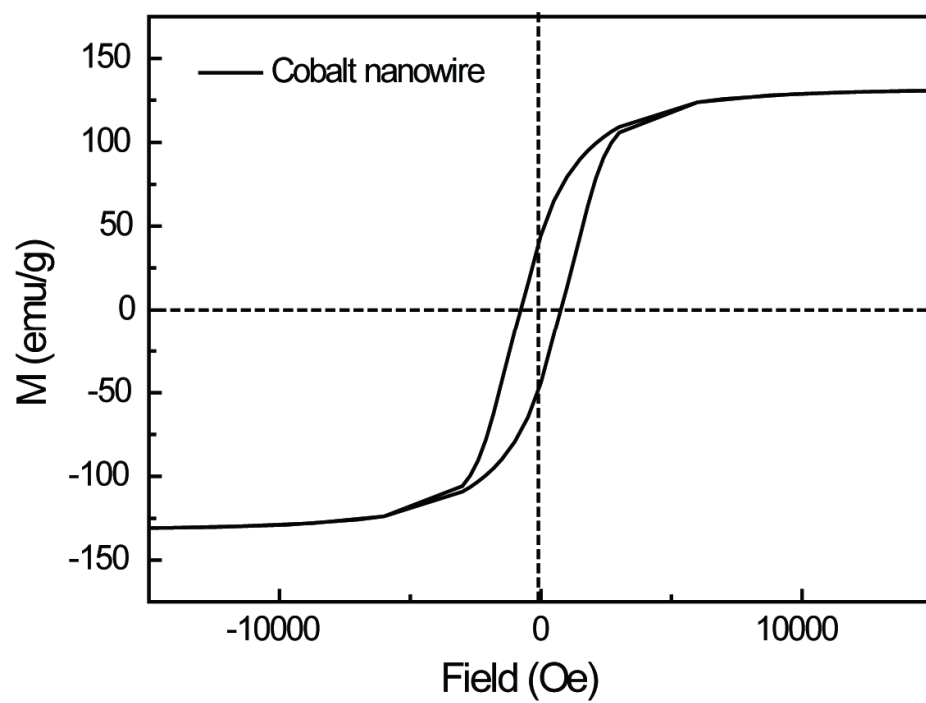


Figure S6. Magnetic hysteresis loop of cobalt nanowires.