Tunable filling rate and increased ferromagnetic properties of nickel-filled carbon nanotubes synthesized from a Pauli paramagnetic lanthanum nickel (LaNi₅) alloy catalyst

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1. Digital photographs of LaNi₅ alloy catalyst and pre-treated catalyst

Fig. S1 – Digital photographs of (a) commercially purchased LaNi₅ alloy catalyst (b) oxidized catalyst at 400 °C and (c) pre-treated catalyst (oxidation at 400 °C followed by H₂ reduction at 550 °C).
2. TEM, HRTEM and SAED analyses of pretreated LaNi₅ alloy catalyst

**Fig. S2** – TEM analysis of pre-treated catalyst (oxidized at 300 °C followed by H₂ reduction at 550 °C); (a, b) High magnification TEM images, (c) HRTEM image and (d) SAED pattern.
3. SEM and TEM analyses of pristine CNTs

Fig. S3 – (a, b) SEM and (c, d) TEM images of pristine CNTs synthesized from pyrolysis of C₂H₂ over LaNi₅ alloy catalyst at 700 °C.