Electronic Supplementary Material (ESI) for RSC Advances.

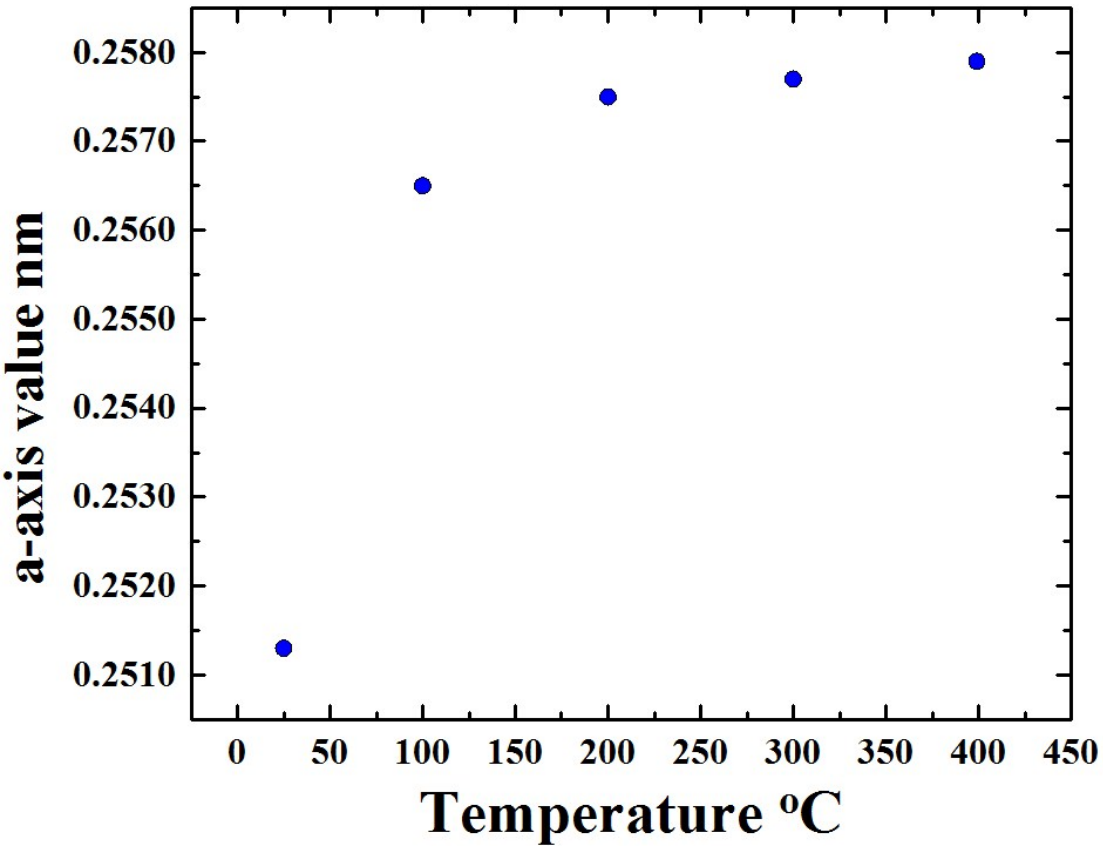

Figure 1 Supp.: Plot showing the T-dependence variation of the a-axis of the graphitic CNT unit cell.

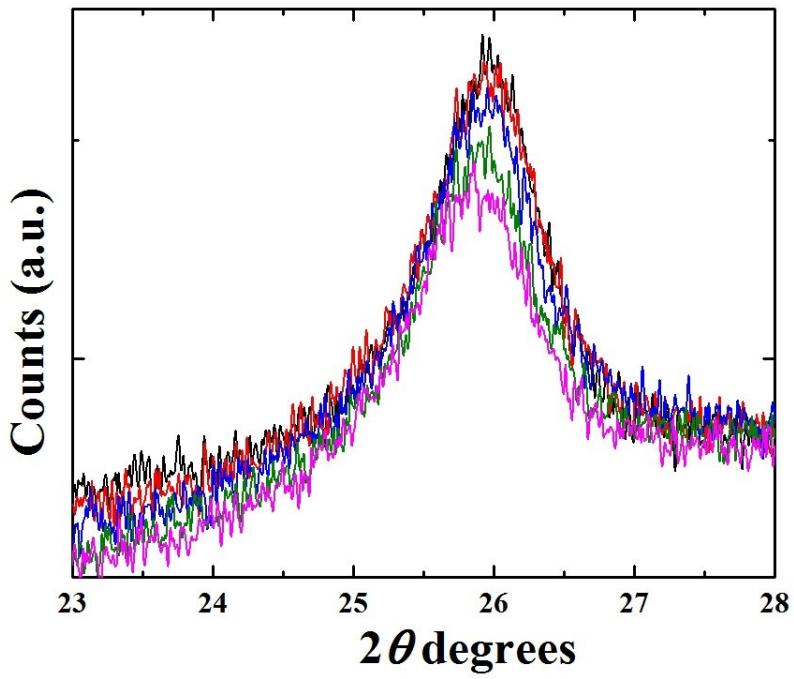

Figure 2 Supp.: Plot showing the T-dependence variation of the 002 graphitic CNT reflection.

Note that a slight decrease of the 002 reflection-intensity is observed. Such observation may imply that CNT walls can be slowly consumed by the heating-process also in vacuum.

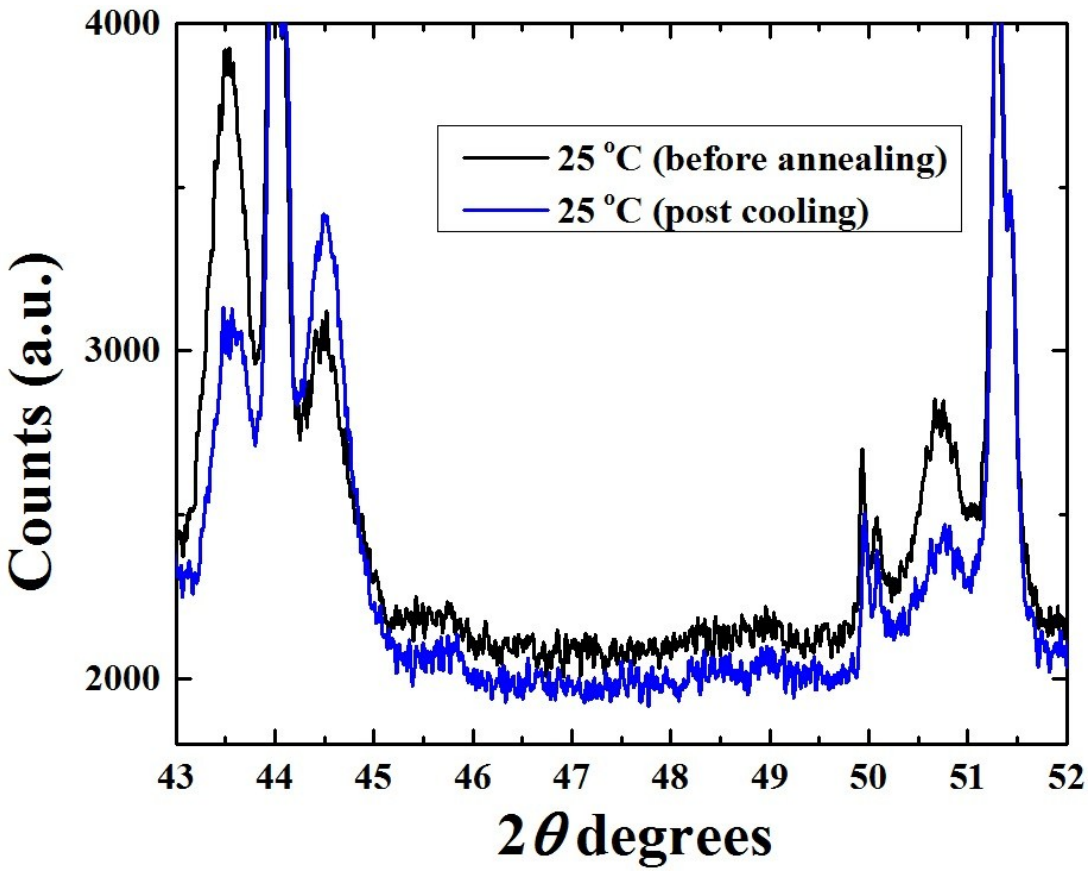

Figure 3 Supp.: Plot showing the variation in the γ-Fe and α-Fe intensities before the annealing treatment in vacuum and after annealing (after cooling down the sample with liquid nitrogen).

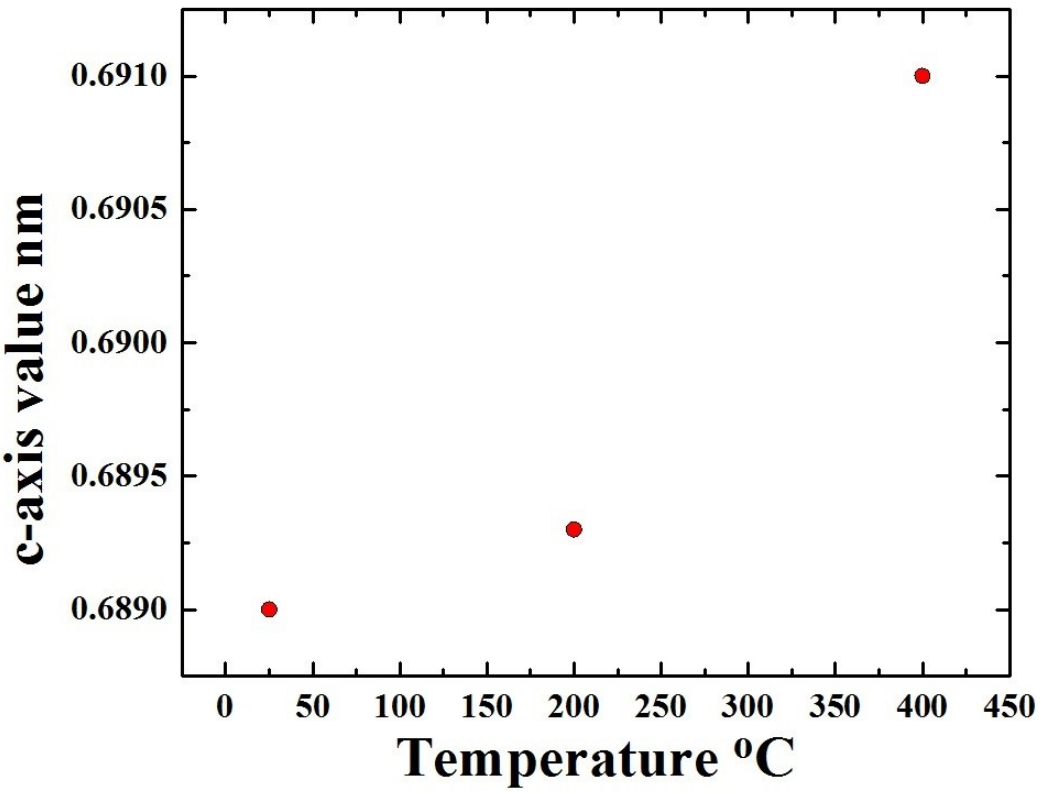

Figure 4 Supp: Plot showing the T-dependence variation of the c-axis of the graphitic CNT unit cell for the case of hollow CNTs.

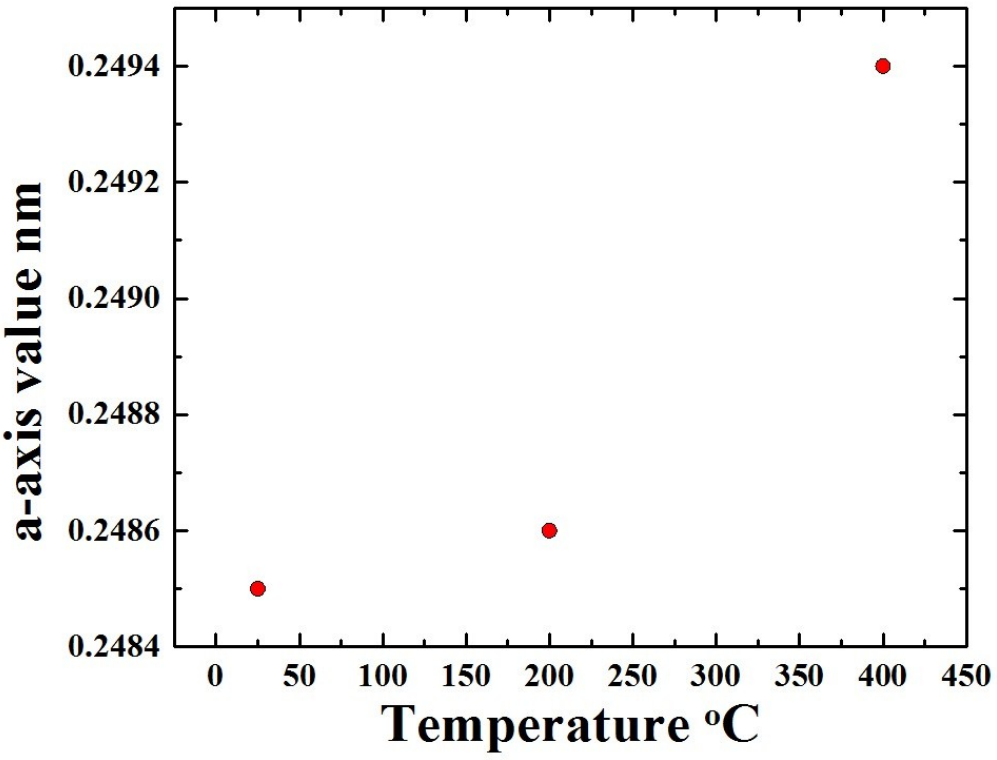

Figure 5 Supp: Plot showing the T-dependence variation of the a-axis of the graphitic CNT unit cell for the case of hollow CNTs.

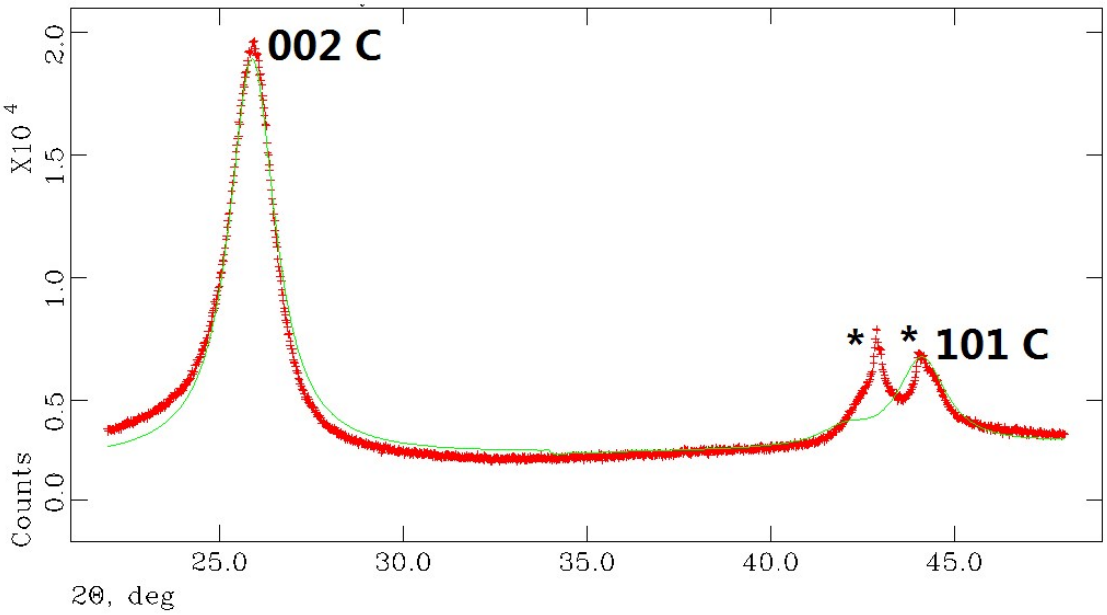

Figure 6 Supp: XRD diffractogram (red line) and Rietveld refinement (green line) of the sample comprising hollow CNTs measured at the temperature of 25 °C. Note that the black stars indicate the peaks arising from the substrate used for the measurement.

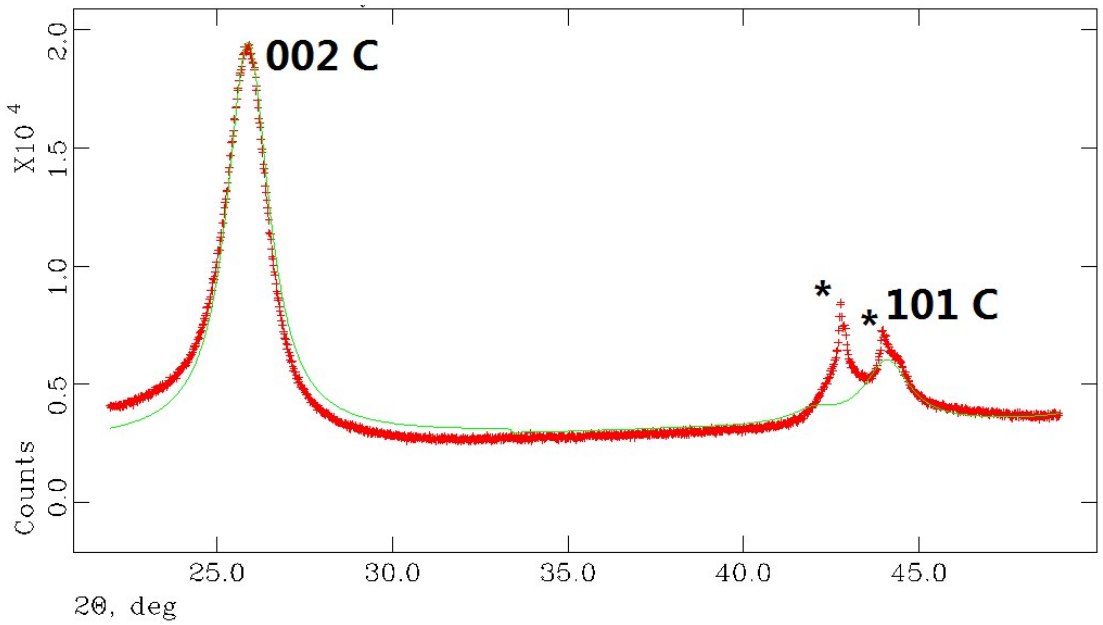

Figure 7 Supp: XRD diffractogram (red line) and Rietveld refinement (green line) of the sample comprising hollow CNTs measured at the temperature of 200 °C. Note that the black stars indicate the peaks arising from the substrate used for the measurement.

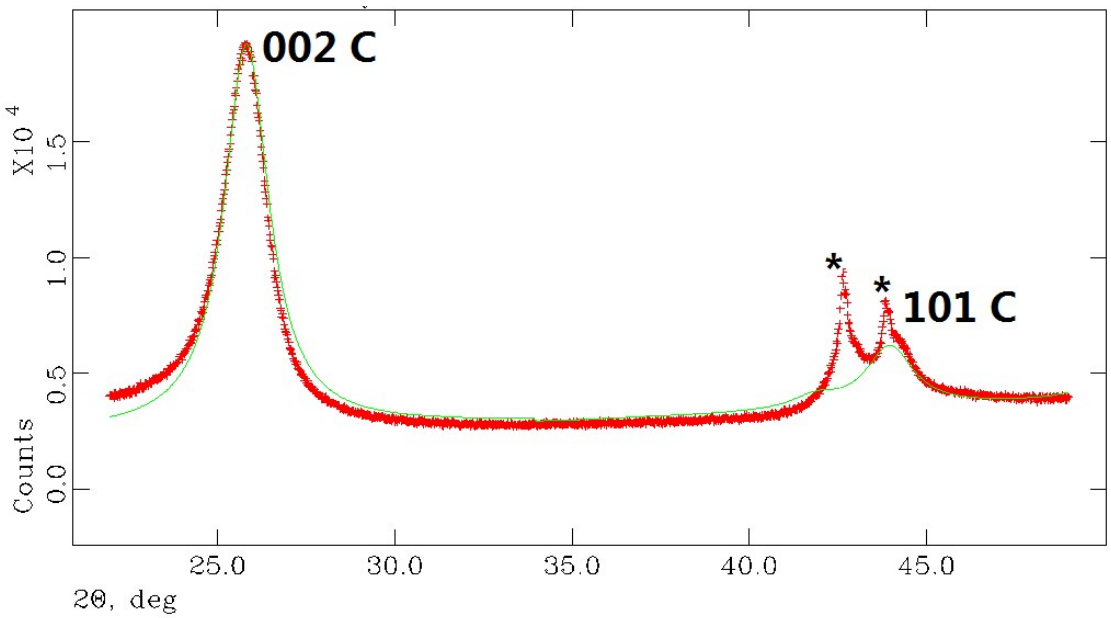

Figure 8 Supp: XRD diffractogram (red line) and Rietveld refinement (green line) of the sample comprising hollow CNTs measured at the temperature of 400 °C. Note that the black stars indicate the peaks arising from the substrate used for the measurement.

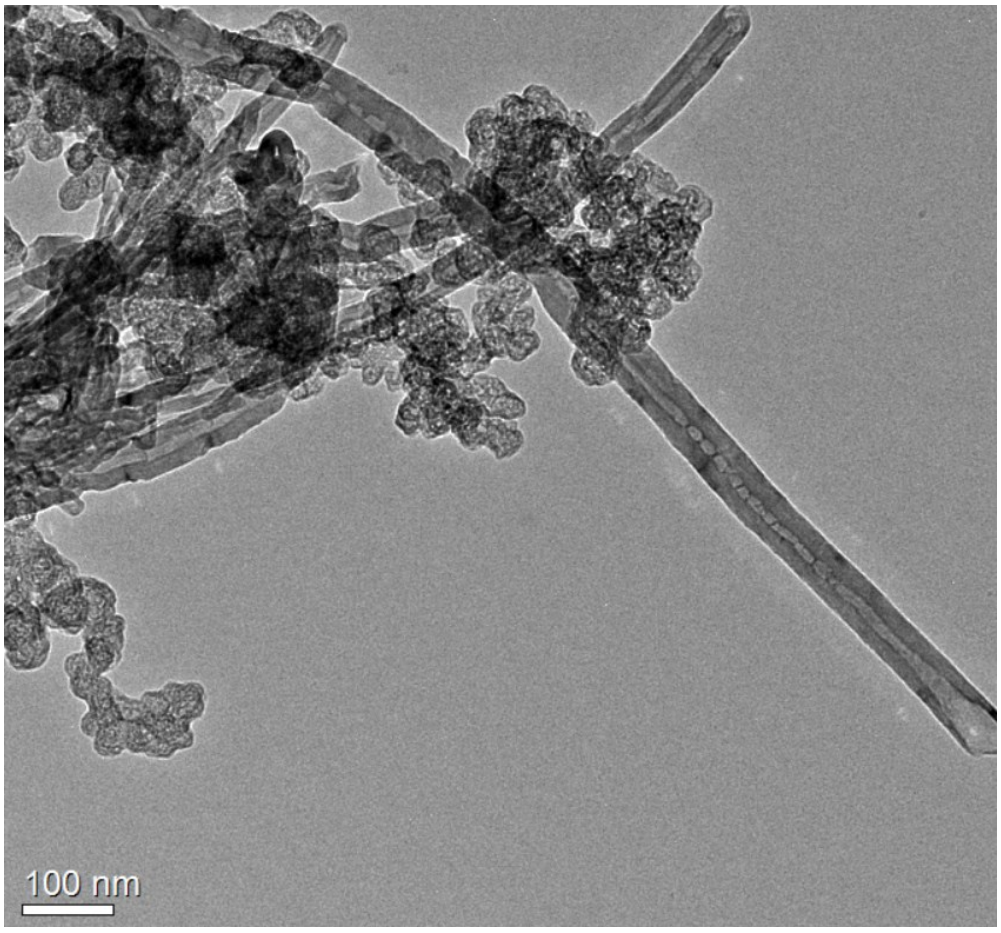

Figure 9 Supp：typical TEM micrograph showing the cross-sectional morphology of the hollow CNTs used for the second set of Temperature dependent XRD measurements in vacuum. This type of sample appears to contain also amorphous-like impurities (together with hollow CNTs).