

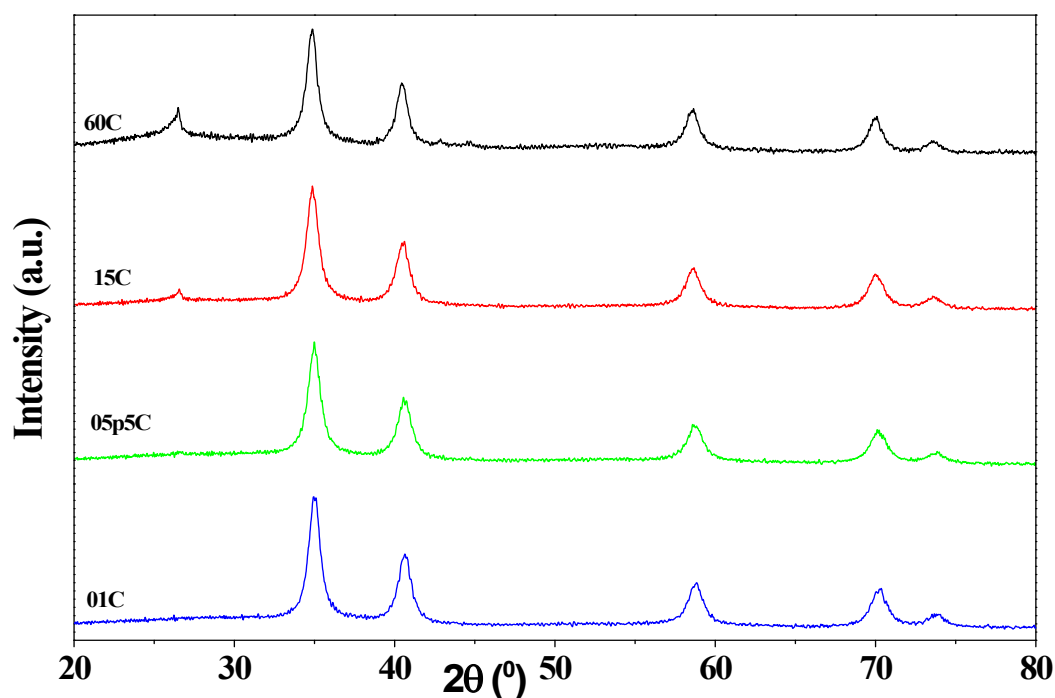


Fig. S1 Selected XRD results of the TaC powders obtained for different initial carbon concentrations. (Only selected data have been plotted to ensure clear visibility of the increasing graphite peak).

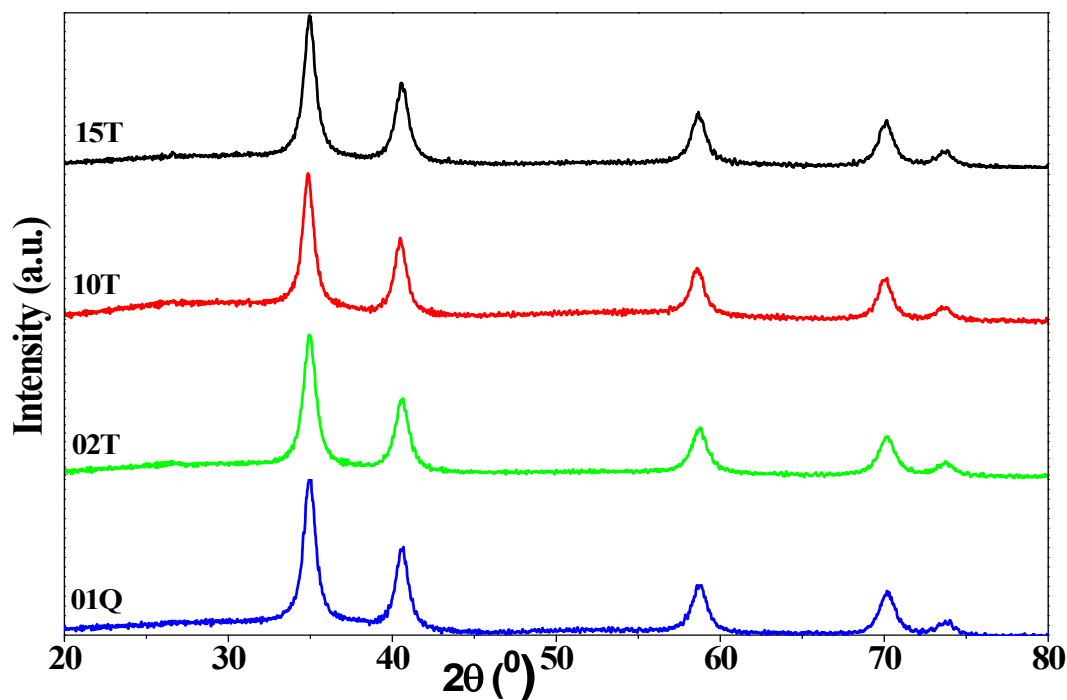


Fig. S2 Selected XRD results of the TaC powders obtained for different soaking times.

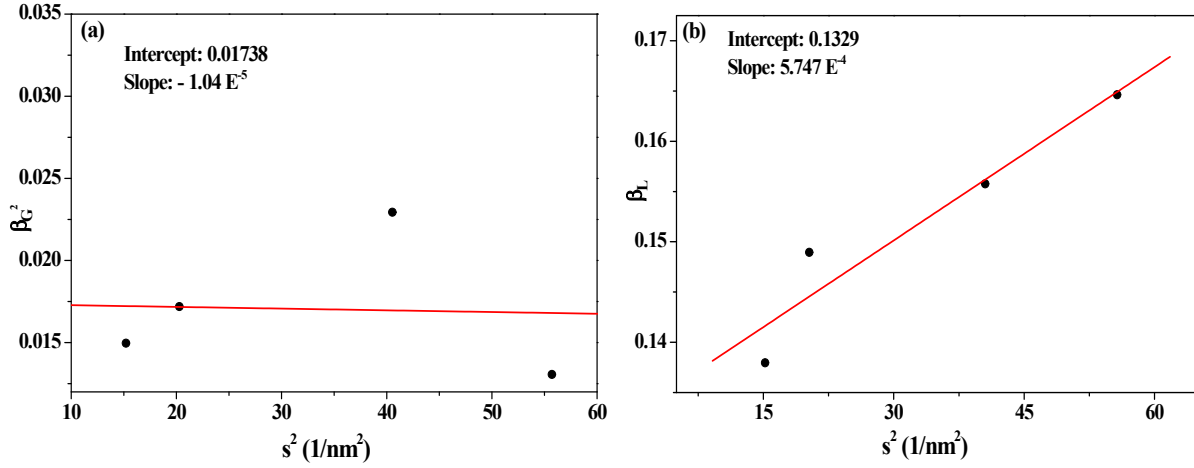


Fig. S3 Double-Voigt Integral breadth analysis graphs ((a) and (b)) of 03C sample.

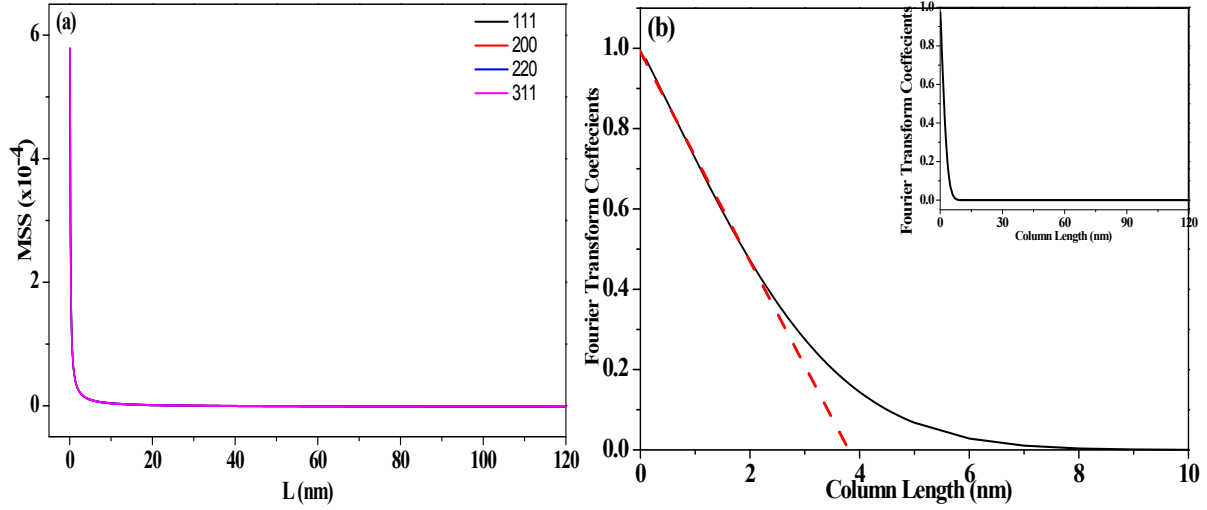


Fig. S4 (a) Mean Square Strain (MSS) as function of column length (L) for all the indexed planes for the 03C sample showing the isotropic nature of the strain. (b) The initial slope of the Fourier transform graph is used to determine the surface weighted particle size. Inset shows the variation of Fourier transform coefficients with column length (L) for the 02T sample.

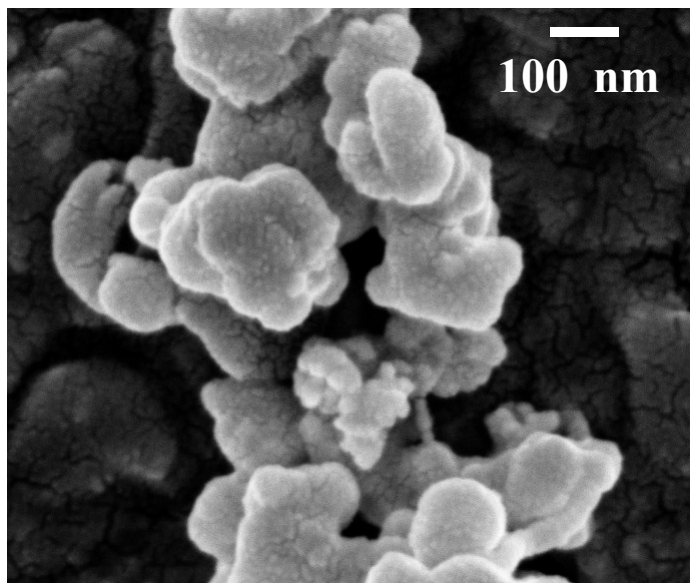


Fig. S5 FE-SEM images for the 03C sample

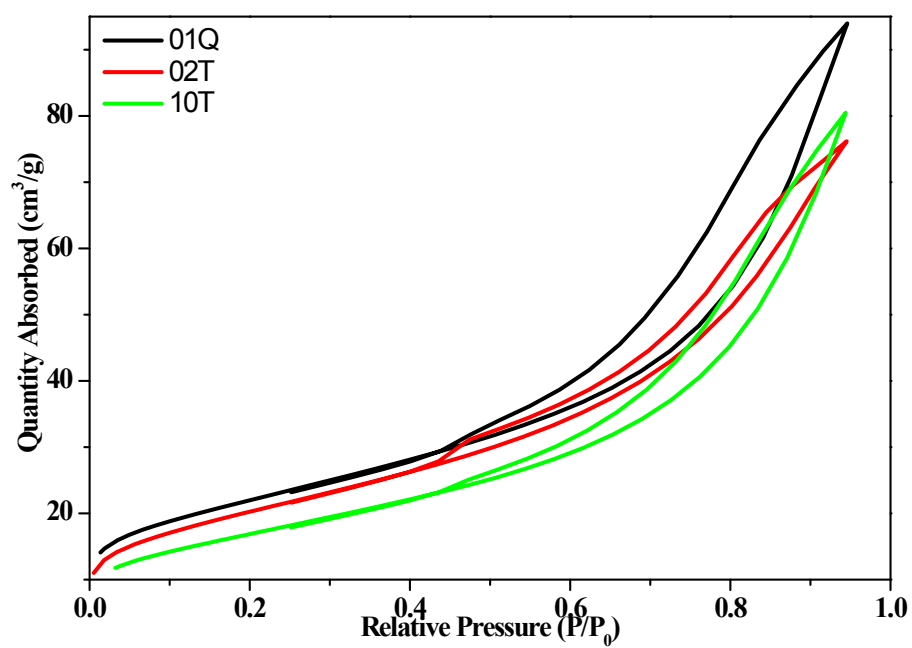


Fig. S6 N_2 adsorption-desorption isotherms for the synthesized samples with increasing soaking times.