

## Supporting Information

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### “Engineering of Structural and Morphological Characteristics of MWCNTs Employing Nano-dimensional Binary Oxide Coating with Enhanced Thermal Oxidation Resistance Property vis-a-vis Tailoring of its Reinforcement Potentiality”

Paromita Das <sup>a†</sup>, Savan Kumar Sharma<sup>a</sup>, and Barun K. Sanfui,<sup>\*a</sup>

<sup>a</sup>Department of Ceramic Technology, Government College of Engineering and Ceramic Technology (Autonomous Post Graduate) NAAC Accredited Grade A, 73, A. C. Banerjee Lane, Kolkata-700010, West Bengal, India,

\*E-Mail: [mailme.drbs@gmail.com](mailto:mailme.drbs@gmail.com)

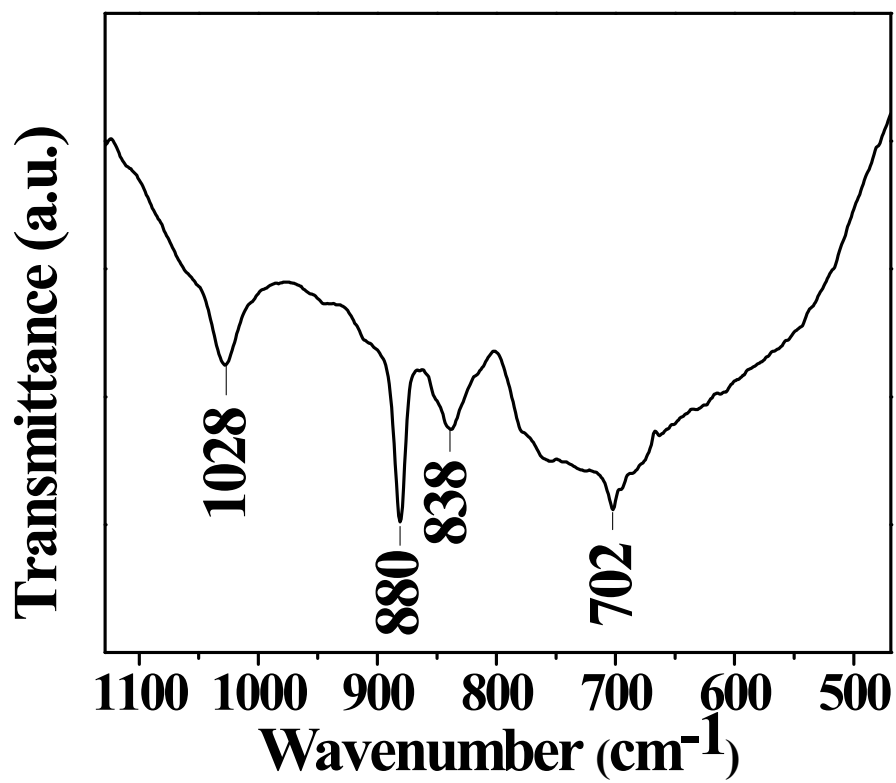
<sup>†</sup> Refractory and Traditional Ceramics Division, CSIR-CG&CRI, Jadavpur, Kolkata-700032, West Bengal, India

**Table S1** Relative intensity position ( $2\theta$ ), FWHM and d-spacing (nm) analysis from XRD of pristine, functionalized CNTs and their respective coated counterparts.

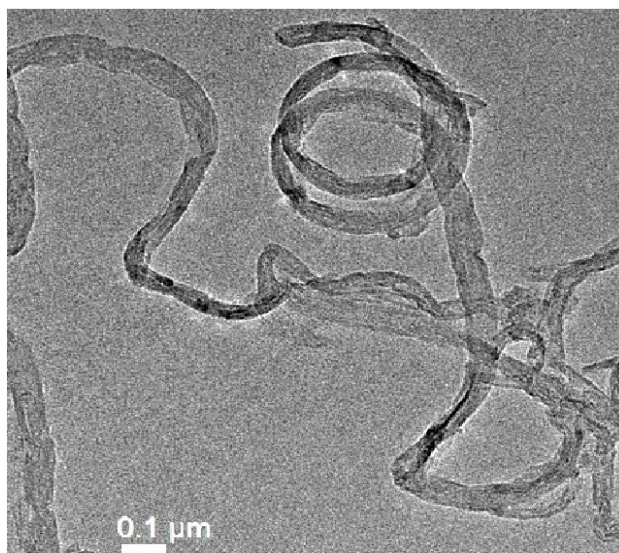
Code	Graphitic region			Disordered region		
	$2\theta$	FWHM	$d_{002}$ (nm)	$2\theta$	FWHM	$d_{002}$ (nm)
P-CNT	25.94	2.15	0.3431	23.71	3.67	0.3749
C2.5-P-CNT	----	----	----	----	----	----
F-CNT	25.92	1.88	0.3433	24.67	3.00	0.3604
C2.5-F-CNT	25.99	1.68	0.3424	24.54	1.94	0.3623

**Table S2** Relative intensity ratio (ID /IG), peak position and FWHM from Raman spectra of uncoated and variable MgAl-binary oxide coated F-CNT structure.

First Order Raman Spectra	Peak 1 D band ( $\text{cm}^{-1}$ )		Peak 2 G band ( $\text{cm}^{-1}$ )		Peak 3 D' band ( $\text{cm}^{-1}$ )		ID/IG
	Peak position	FWHM	Peak position	FWHM	Peak position	FWHM	
F-CNT	1341.03	53.41	1574.42	42.83	1608.75	24.81	1.057
C2.5-F-CNT	1345.76	45.38	1578.77	40.60	1613.37	20.13	1.147
C5-F-CNT	1350.34	45.41	1584.83	39.10	1621.99	16.33	1.372
C7.5-F-CNT	1351.21	43.47	1586.55	38.45	1623.35	17.76	1.377
C10-F-CNT	1350.46	43.12	1586.14	38.64	1622.08	18.37	1.376



**Fig S1:** FTIR spectra of MgAl-binary oxide heat treated at 500°C for 2h.



**Fig S2:** Low resolution TEM of MgAl-binary oxide coated MWCNTs nano-hybrid (C7.5-F-CNT) heat treated at 500°C for 2h.