Non-Covalent Ruthenium Polypyridyl Complexes-Carbon Nanotubes Composites: An Alternative for Functional Dissolution of Carbon Nanotubes in Solution

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Figure S1: Synthesis scheme for the preparation of Ru(II) complexes (1, 2 and 3).

Figure S2a: Concentration dependent absorption profile of SWCNTs in Ru(II) complexes-SWCNT composites at 642 nm (similar behavior observed at 659 and 784 nm).

Figure S2b: Photographs of (a)SWCNT-1, (b)SWCNT-2 and (c)SWCNT-3 solutions after centrifugation.

Figure S3: NIR fluorescence spectra of SWCNT-1 and SWCNT-3 solutions at 642, 659 and 784 nm.

Figure S4: AFM-Histogram analysis of SWCNT-1, SWCNT-2 and SWCNT-3.
The ruthenium complexes 1-3 studied for this work were prepared in a similar way by reaction of [Ru(bpy)_2Cl_2]_2H_2O with bidentate N-N ligands dppz, dppn and tpphz in methanol/water or ethanol/water (1:1 v/v) at reflux for 4-24 hours. They were then precipitated from aqueous solution with saturated ammonium hexafluorophosphate. The PF_6 salts were dissolved in acetone and produced the water soluble chloride salts upon addition of a saturated aqueous solution of tetra-n-butylammonium chloride (TBACl) in acetone. The chloride salts were further purified by biphasic recrystallization in methanol-ethyl acetate (1:10), (v/v) and used as such. The ligands themselves were prepared by the condensation of phenanthroline-5,6-dione with substituted o-diamino compounds. The analytical characterization data is in accordance with that reported in literature.


**Figure S2a:** Concentration dependent absorption profile of SWCNTs in Ru(II) complexes-SWCNT composites at 642 nm (similar behavior observed at 659 and 784 nm).

**Figure S2b:** Photographs of (a)SWCNT-1, (b)SWCNT-2 and (c)SWCNT-3 solutions after centrifugation.
Figure S3: NIR fluorescence spectra of SWCNT-1 (TOP) and SWCNT-3 (BOTTOM) solutions at 642, 659 and 784 nm.
Figure S4: AFM-Histogram analysis of SWCNT-1, SWCNT-2 and SWCNT-3.