

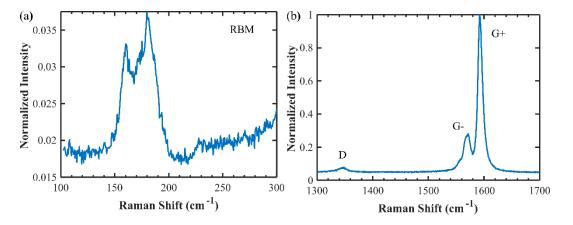


## Supporting Information

## Investigation of Fractal Carbon Nanotube Networks for Biophilic Neural Sensing Applications

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**Figure S1.** Raman spectra of CNT thin film. Spectra were taken at a laser excitation of 514 nm (Horiba Jobin-Yvon LabRAM HR800). (**a**) Radial breathing mode peaks at 162 cm<sup>-1</sup> and 180 cm<sup>-1</sup> corresponding to diameters of 1.5 nm and 1.4 nm, respectively. These results are consistent with the documentation provided by the manufacturer, NanoIntegris, which indicates that the single-walled CNTs used consist of 99% semiconducting CNTs with diameters ranging from 1.2 to 1.7 nm with a mean diameter of 1.4 nm. (**b**) The D-band feature at 1340 cm<sup>-1</sup> is much smaller than G+ peak at 1590 cm<sup>-1</sup> and the G- peak at 1570 cm<sup>-1</sup> indicating minimal defects in the CNTs.