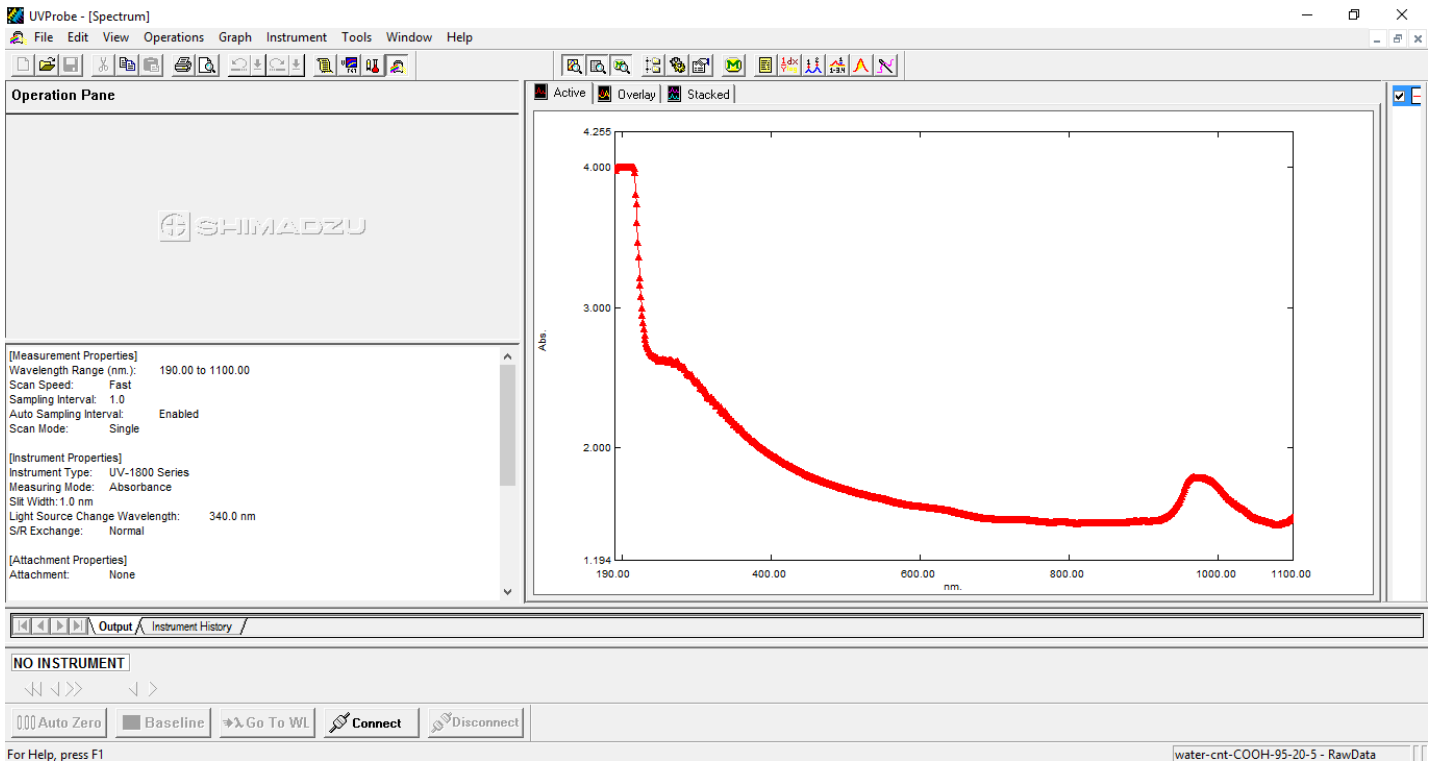




Certificate of Analysis

Colloidal stability of water-based multi-walled carbon nanotubes-carboxyl suspension

Additive	Multi-Walled Carbon Nanotubes-Carboxyl
Basefluid	Water
Sedimentation after 30 days of preparation	<5%



UV-Vis spectrum of water-based multi-walled carbon nanotubes-carboxyl suspension



Certificate of Analysis

Characterization of additives (Multi-Walled Carbon Nanotubes-Carboxyl)

Purity of CNTs: +95%

Diameter: 20-30 nm

Regular Length: 5-10 μm

SSA: more than 200 m^2/g

Density: 2.1 g/cm^3

i. Morphological analysis

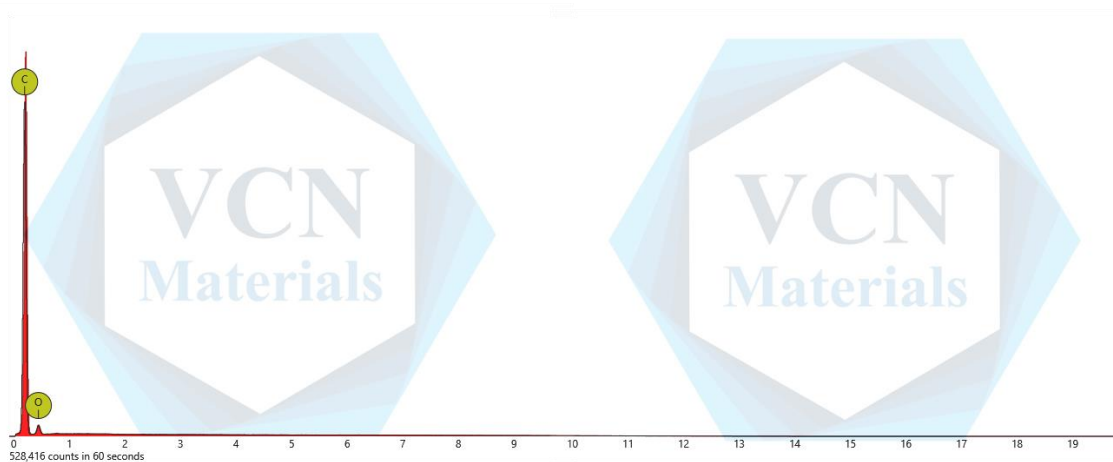




Certificate of Analysis

High resolution transmission electron microscopy image of Multi-Walled Carbon Nanotubes-Carboxyl

ii. Elemental Analysis



EDX image of Multi-Walled Carbon Nanotubes-Carboxyl

Element Number	Element Symbol	Element Name	Atomic Conc.	Weight Conc.
6	C	Carbon	91.49	88.98
8	O	Oxygen	8.51	11.02

Atomic percentage



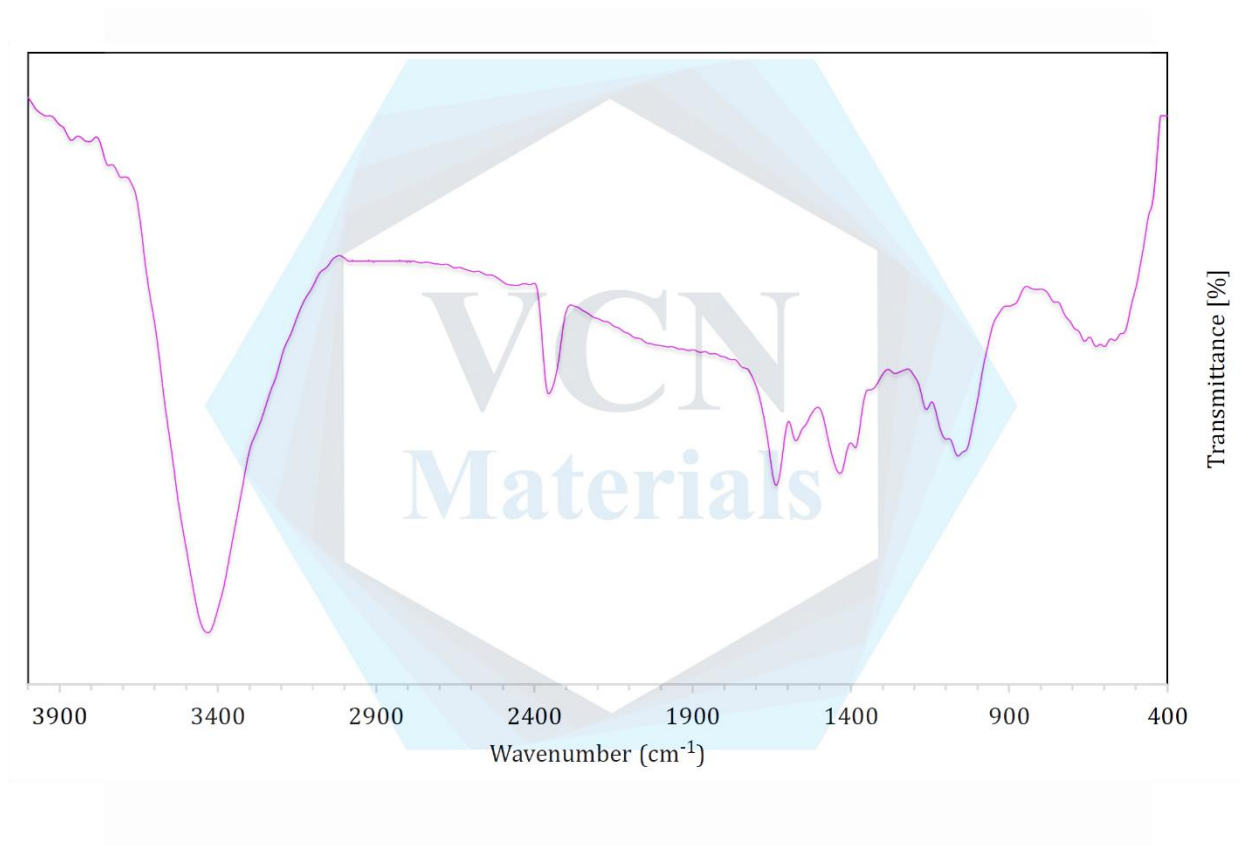
Weight percentage





Certificate of Analysis

iii. Functional Analysis

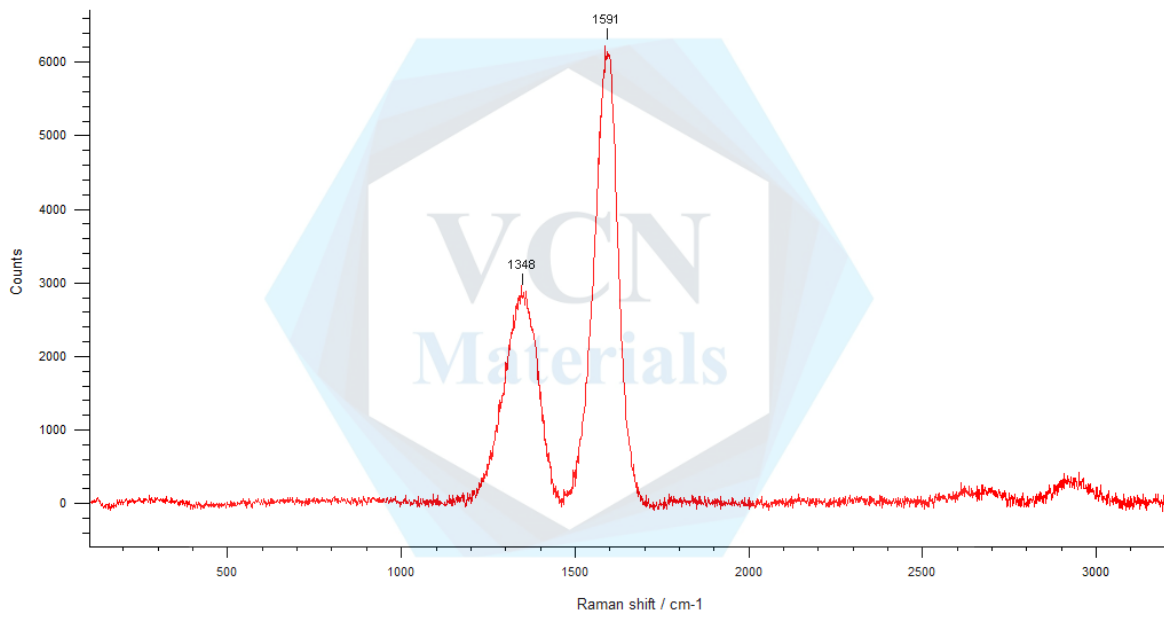


FTIR spectra of Multi-Walled Carbon Nanotubes-Carboxyl



Certificate of Analysis

iv. Structural Analysis



Raman spectra of Multi-Walled Carbon Nanotubes-Carboxyl