ISIS@MACH ITALIA

Science and Technology Facilities Council
ISIS Neutron and Muon Source

Experiment Proposal

Experiment number GP2022004

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Co-investigator	Ms Cadia D&039;Ottavi, University of Rome Tor Vergata, ITALY
Experiment title	Spectroscopic characterization of flexible composite conducting devices
SRF Instrument	**Raman Spectroscopes**
Access Route	Rapid Access
Science Areas	Biology and Bio-materials, Chemistry
Sponsored Grant	None
Grant Title	-
Start Date	-
Similar Submission?	-
Industrial Links	-

Days requested: 5
Previous GP Number: -
DOI: -
Sponsor: -
Grant Number: -
Finish Date: -

Non-Technical Abstract

The increasing interest in stretchable conductive composite materials used for wide ranging applications has sparked a growing demand for studies of scalable and widely applicable fabrication techniques and geometries. The development of stretchable sensors is of significant relevance for companies operating in the biomedical device sector since they allow constant monitoring of the patient, making him more autonomous and therefore improving his quality of life.

We here propose a series of studies to investigate the morphology and composition of composite materials obtained by a CNT (carbon nanotubes) dispersion deposited by drop casting on different commercial polymer substrates (i.e., polyethylene, polyproline, silicone, polyisoprene natural rubber and nitrile butadiene rubber films). To understand the stability of the CNT boundless grafting on the substrate, which is paramount for application, we propose to characterize the samples through complementary use of confocal Raman spectroscopy & SEM-EDX located at Unit-Univ Tor Vergata.

Publications -

Instruments	
Access Route	
Science Areas	
Sponsored Grant	
Grant Title	
Start Date	
Similar Submission?	
Industrial Links	

Days Requested:
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Sample record sheet

Principal contact Professor Silvia Licoccia, University of Rome Tor Vergata, ITALY
SRF Instrument **Raman Spectroscopes** **Days Requested:** 5
Special requirements:

SAMPLE

Material	C, H, O carbon nanotubes	-	-
Formula	CNT, polymer (C H N O)	-	-
Forms	Solid		
Volume	5-10 cc		
Weight	100-200 mg		
Container or substrate	-	-	-
Storage Requirements	-	-	-

SAMPLE ENVIROMENT

Temperature Range	270 - 320 K	-	-
Pressure Range	1000 - 1000 mbar	-	-
Magnetic field range	- T	-	-
Standard equipment	None	-	-
Special equipment	-	-	-

SAFETY

Prep lab needed	Yes	-	-
Sample Prep Hazards	-	-	-
Special equip. reqs	-	-	-
Sensitivity to air	No	-	-
Sensitivity to vapour	No	-	-
Experiment Hazards	-	-	-
Equipment Hazards	-	-	-
Biological hazards	-	-	-
Radioactive Hazards	-	-	-
Additional Hazards	-	-	-
Additional Details	-	-	-
Sample will be	Returned to user by instrument scientist (when inactive)	-	-