

Carbon Technology, Materials and Nano-Magnetism.

Group Leader



Prof. Ncholu I Manyala

Postdoctoral Fellow



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Postgraduate Students



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Phathutshedzo Murovhi
(MSc Student)

Collaboration

International collaboration

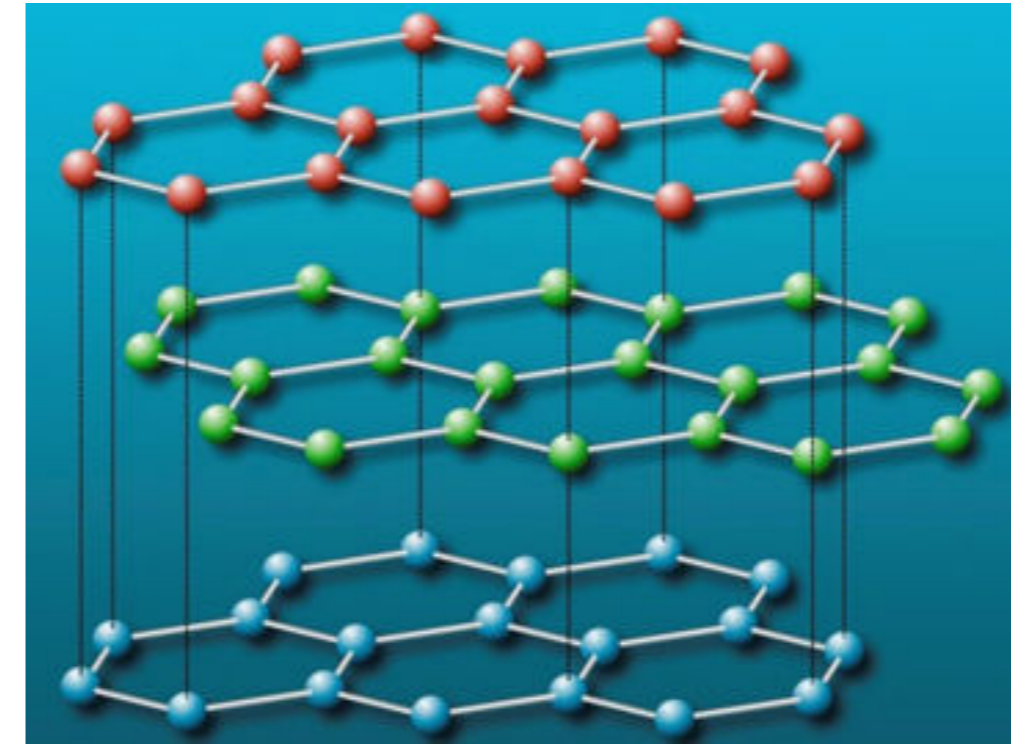
- ◆ Department of Physics and Astronomy, Louisiana State University, USA
- ◆ Department of Physics and Astronomy, University of Pennsylvania, USA.
- ◆ Department of Physics, University of Cologne, Germany.
- ◆ Department of Physics, University of Cheikh Anta Diop, Senegal.

Local collaboration

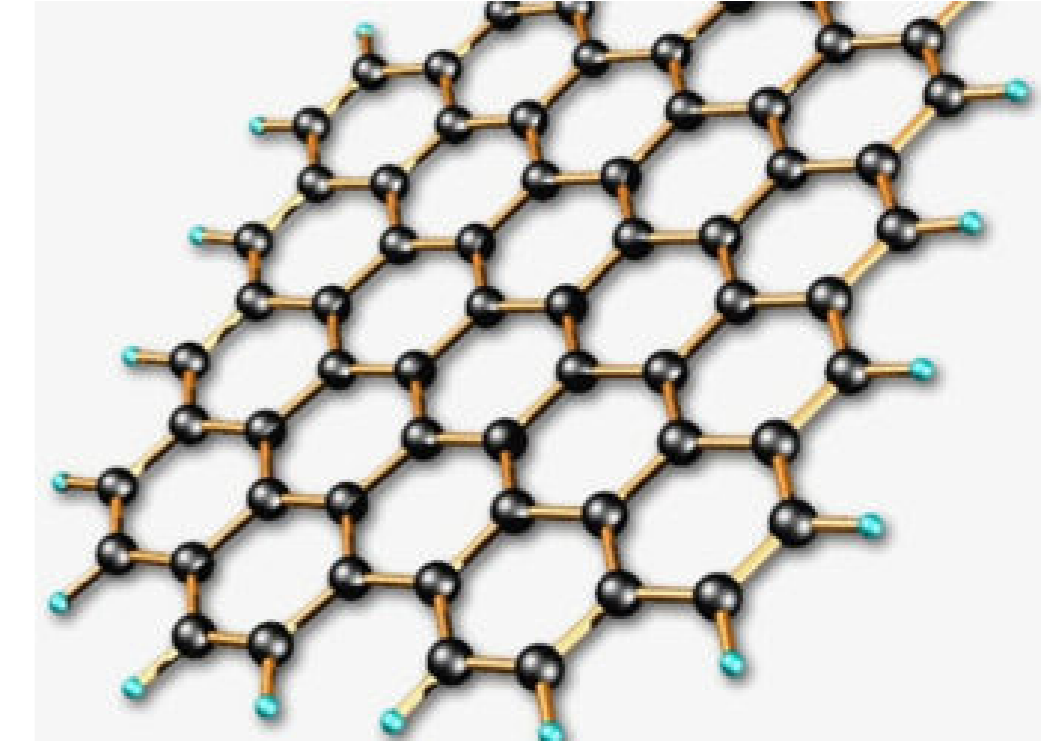
- ◆ Department of Physics, University of Johannesburg, South Africa.
- ◆ iThemba LABS, Cape Town, South Africa.
- ◆ National Laser Center (NLC), CSIR, South Africa.
- ◆ Materials Science and Manufacturing, CSIR, South Africa.

Research Activities

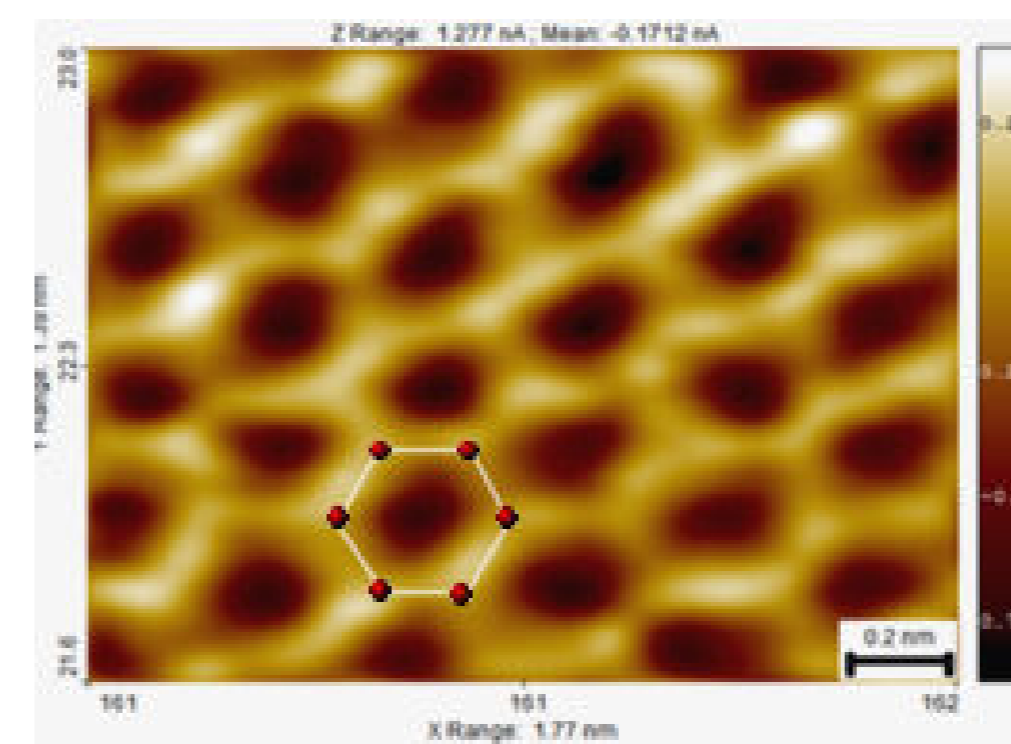
- ◆ Graphene synthesis, characterization and irradiation effects.
- ◆ Graphene films for Photovoltaic cells and renewable energy applications.
- ◆ Three dimensional graphene networks for Supercapacitors and chemical sensing.
- ◆ Carbon modified energy storage materials: Electrochemical (Super) Capacitors.
- ◆ Study of radiation influence on bulk graphites.
- ◆ Magnetic and transport properties of $Fe_{x,y}(Co_x, Mn_y)Si$ alloy at nano-scale synthesized by pulsed laser deposition technique for spintronics application and low-field microwave sensors.



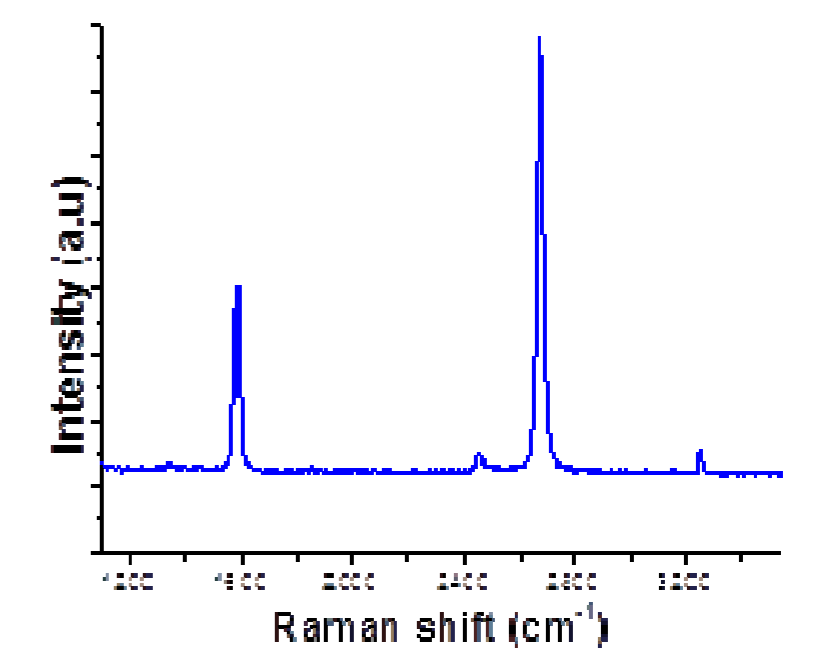
Graphite Structure



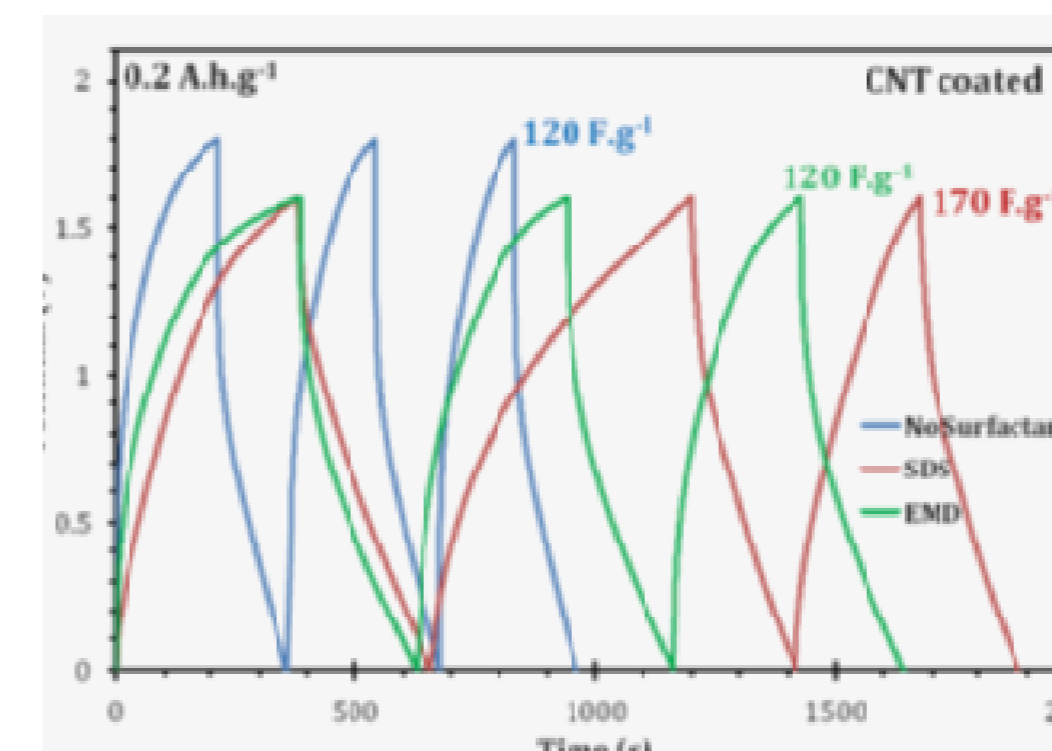
Graphene Sheet



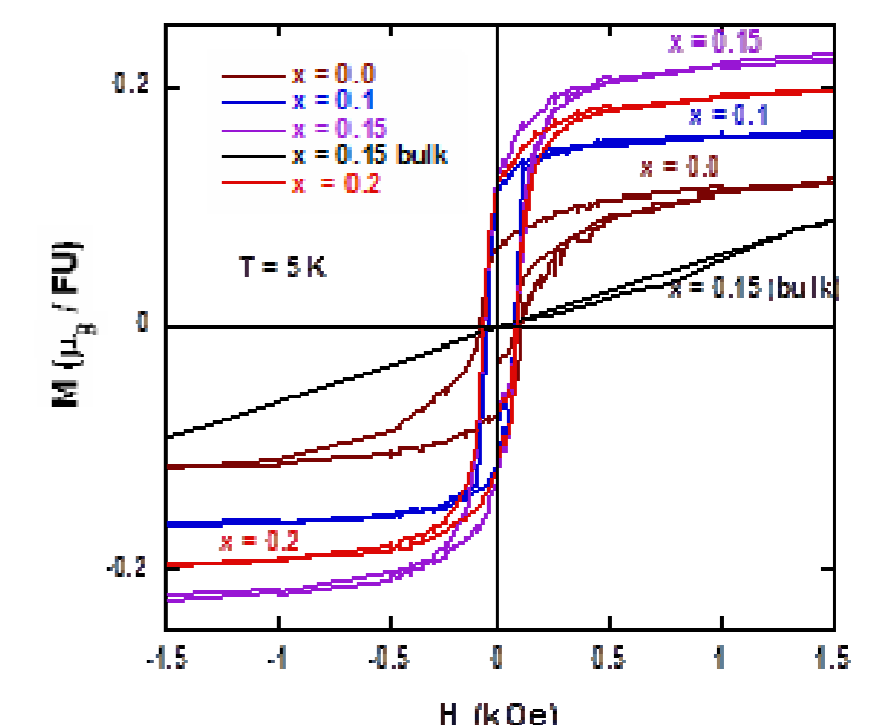
Graphene Lattice Structure



Raman spectrum of Graphene



Carbon Supercapacitors



Thin film magnetization

Funding & Bursary

- ◆ NRF and NITheP
- ◆ Bursary for honours, MSc and PhD level students in this research group.

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