

# Nuclear NanoRadioIsotopes

## Nanotechnology and Nuclear Radiation

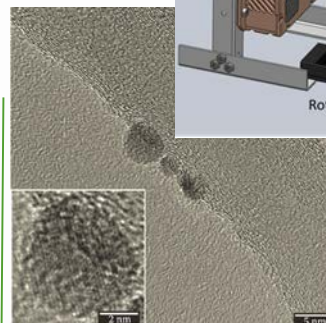
- Production of Nanomaterials with Radiation
- Carbon Nanotubes Adorned with Transition Metals
- Radioactive Metal Nanoparticles for Cancer Treatment

## In-Vitro Testing Facilities

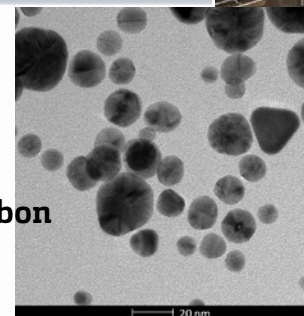
- Creation of a facility to study the toxicity of Nanoradioisotopes produced at the Missouri S&T research reactor (MSTR) on immortalized cancer cells.

## In-Vivo Testing Facilities

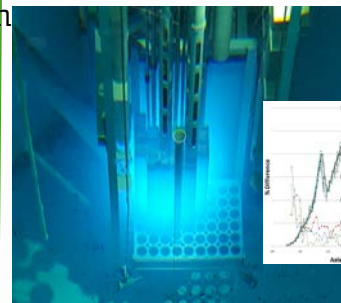
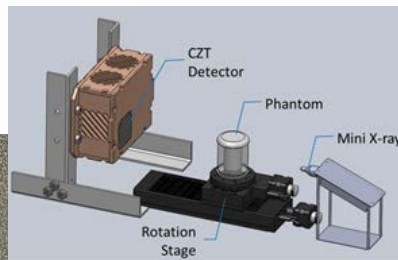
- Facility Integration for the Synthesis and testing of Radio-Nano-Isotopes At Missouri S&T.
- Mouse testing facility for radioactive isotopes.



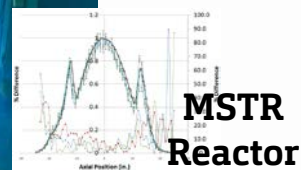
**Pd Nanoparticles on Carbon Nanotubes**



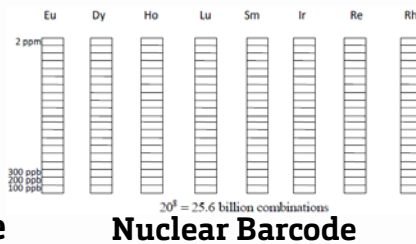
**Radioactive Metal Nanoparticles for Cancer Treatment**



**Axial Flux Profile**



**MSTR Reactor Upgrade**



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## Funding

- NRC Grant HQ-12-G-38-0075: Laboratory on Corrosion of Nuclear Materials. \$194,447.
- NRC Grant 38-10-966. Creation of a Radiochemistry Teaching Program at S&T. \$125,000.
- DOE. MSTR Reactor Upgrade. \$300,000.

## Keywords

- #Nanoparticles #Nuclear Barcode #Reactor Upgrade #Radioactive Nanoparticles #Cancer

## Recognitions

- 2016 Innovation Research Award.** Synthesis and Testing of Radio NPs
- 2016 US Patent 9299526.** Electron Source (N-UNCD)
- 2014 Best Poster Award. 1<sup>st</sup> Place.** Graduate Research Showcase.
- 2012 Best Poster Award. 2<sup>nd</sup> Place.** Graduate Research Showcase
- 2012 Best Poster Award. 3<sup>rd</sup> Place.** Graduate Research Showcase
- 2011 Top 25 Hottest Articles Radiation Physics and Chemistry.**