

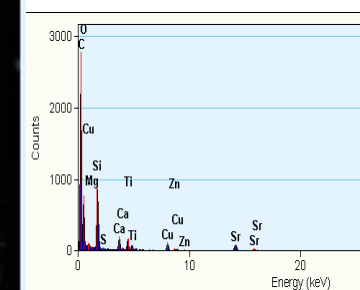
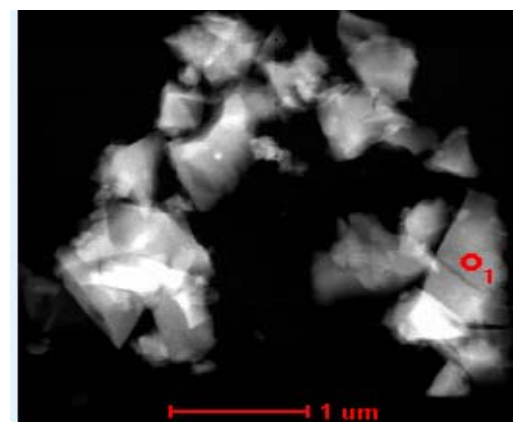
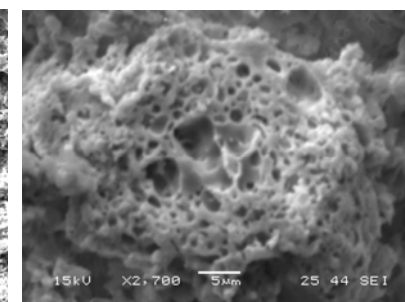
Waste Management Research @ UNLV

- Introduction
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- Research Focus
- Current Research
 - Waste Management
 - Cesium/Strontium Waste Forms
 - Radon Emanation from Thorium Wastes
 - Repository Performance of TRISO Fuels
 - Safeguards in the Nuclear Fuel Cycle
 - Optical Spectroscopy for On-line Monitoring
 - Laser Ablation Mass Spectroscopy

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Cs/Sr Waste Form Characterization

- Characterization
 - Sr/Ba in $(\text{Sr/Ba})\text{Al}_2\text{Si}_2\text{O}_8$
 - Cs in AS glass phase
 - Pollucite nanocrystals
 - Function of waste load
- Synthesis
 - Impact of process conditions
 - Thermal Stability
 - Phase Transition Temps.



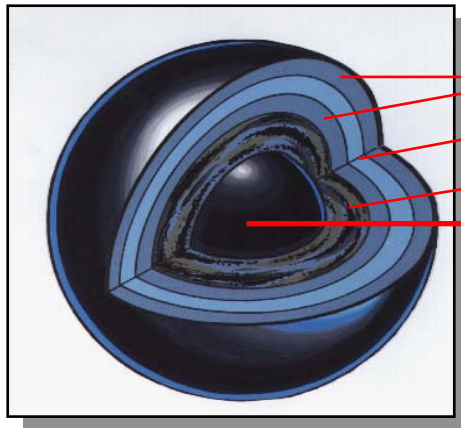
Radon Emanation from Actinide Waste

- NTS Waste Management
 - Thorium Nitride Waste
 - Radon Flux Design Limit
- Emanation Coefficient
 - Measurement Technique
 - Rn source term vs.
 - Chemical Species
 - Surface Area / Particle size
- Uranium Waste Forms?



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Repository Performance of TRISO Fuel



Pyrolytic Carbon
Silicon Carbide
Porous Carbon Buffer
Oxide Fuel (TRUO_{1.68})

} TRISO Coating



PARTICLES



COMPACTS

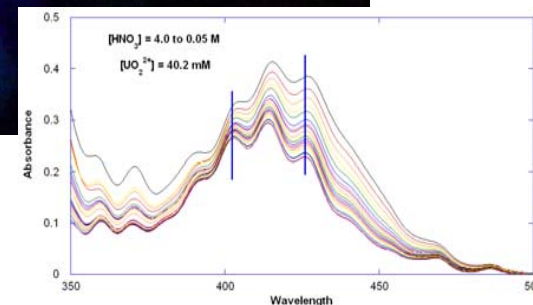


FUEL ELEMENTS

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Optical Spectroscopy – Process Monitoring

- Advanced Safeguards
 - Real Time Analysis
 - Process Monitoring
- UV-Visible Spectroscopy
 - Uranium Concentration
 - Correct for Process Chemistry
 - Cold Chemical Monitoring
 - Nitrate concentration
- Fiber Optic Demo at ANL



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Laser Ablation Mass Spectrometry

- Safeguards / MC&A
 - Pu in Spent Nuclear Fuel
 - Pu in Actinide MOx
- Forensics
 - Rapid Analysis Technique
- Project Goals
 - Benchmark Method vs. Dissolution Techniques
 - Resolve U/Pu and Pu/Am Isobars

