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Phase stability and dynamical processes in materials under extreme conditions

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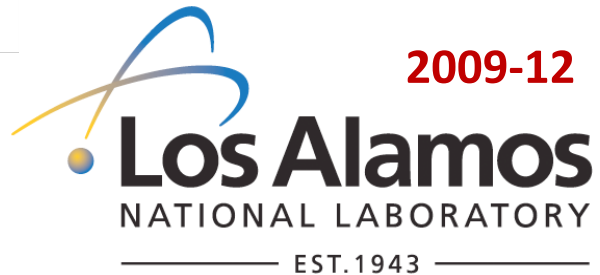
04th September 2018, Nuclear Academics, Liverpool

My Journey so far..

2009



2009-12



2012-17

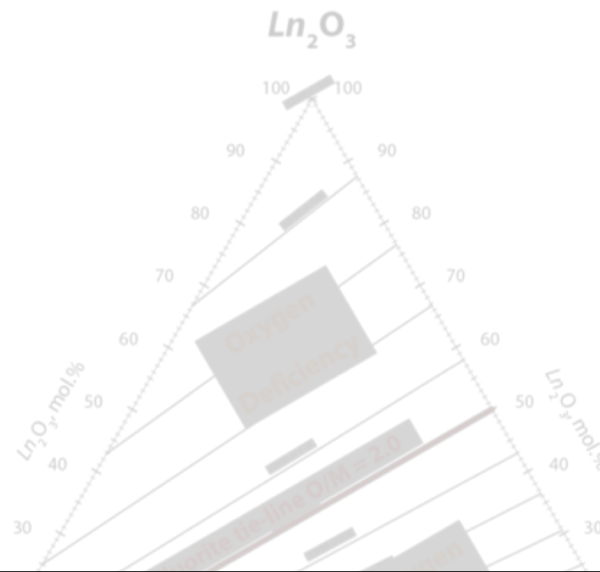
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Department of Materials
Science & Engineering
COLLEGE OF ENGINEERING

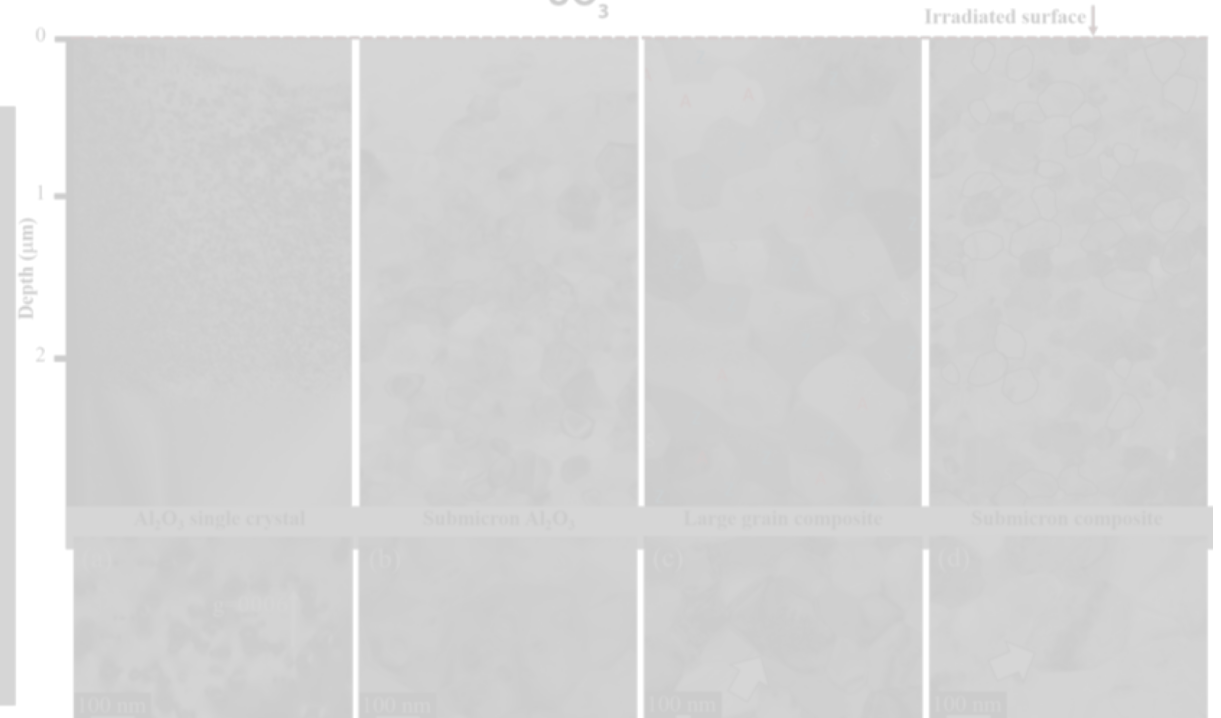
2017- ???



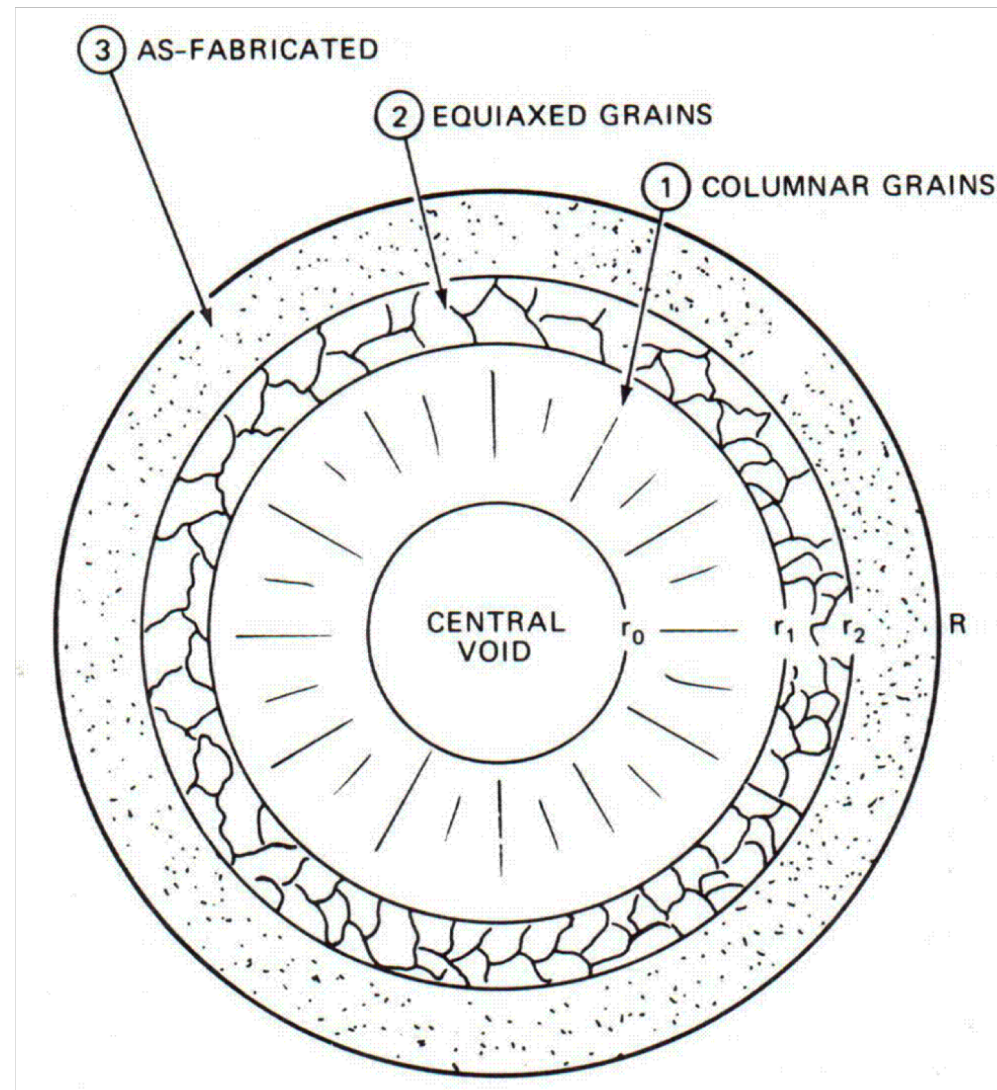
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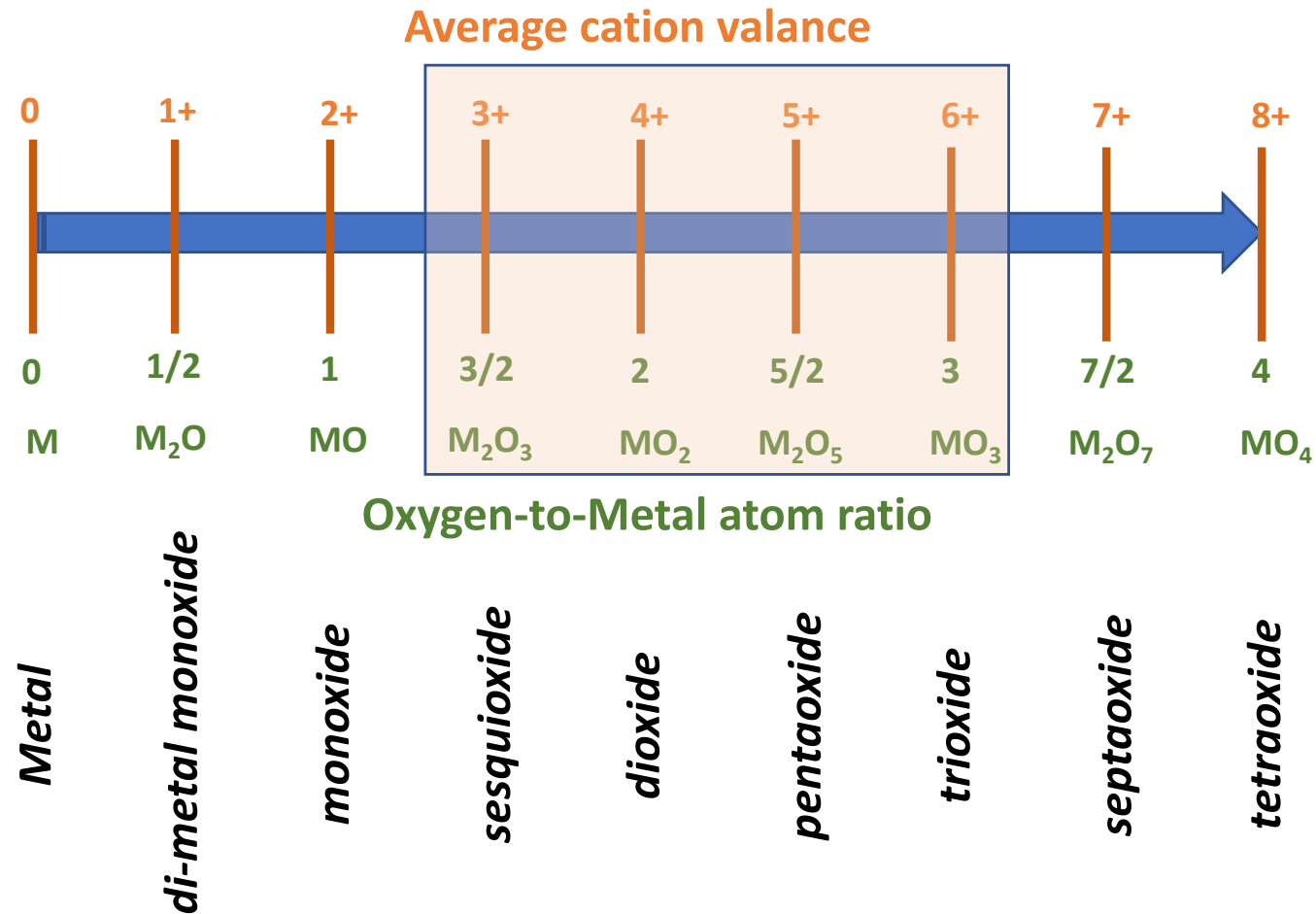
Research Interests



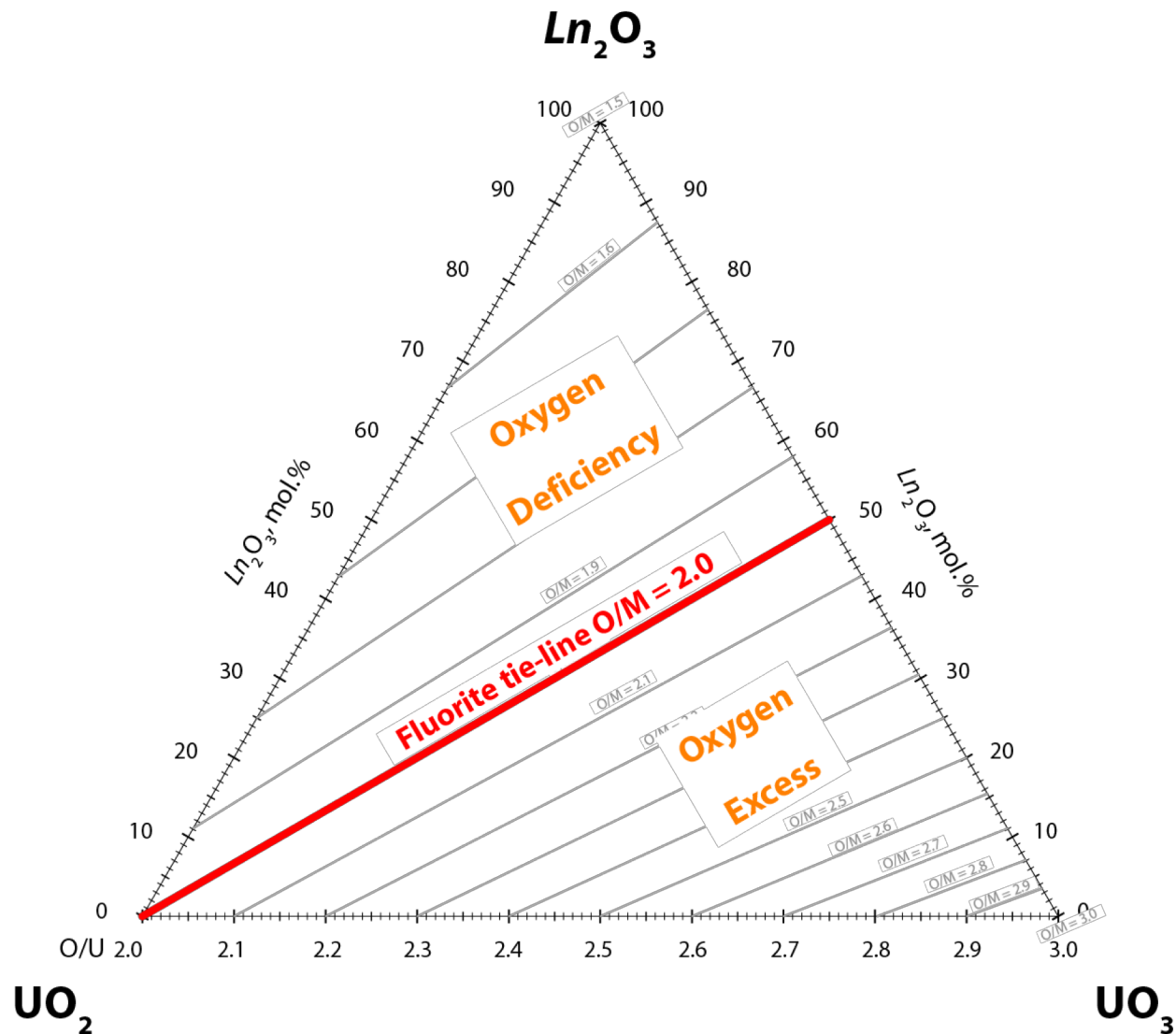
Microstructure and chemical evolution in fuels



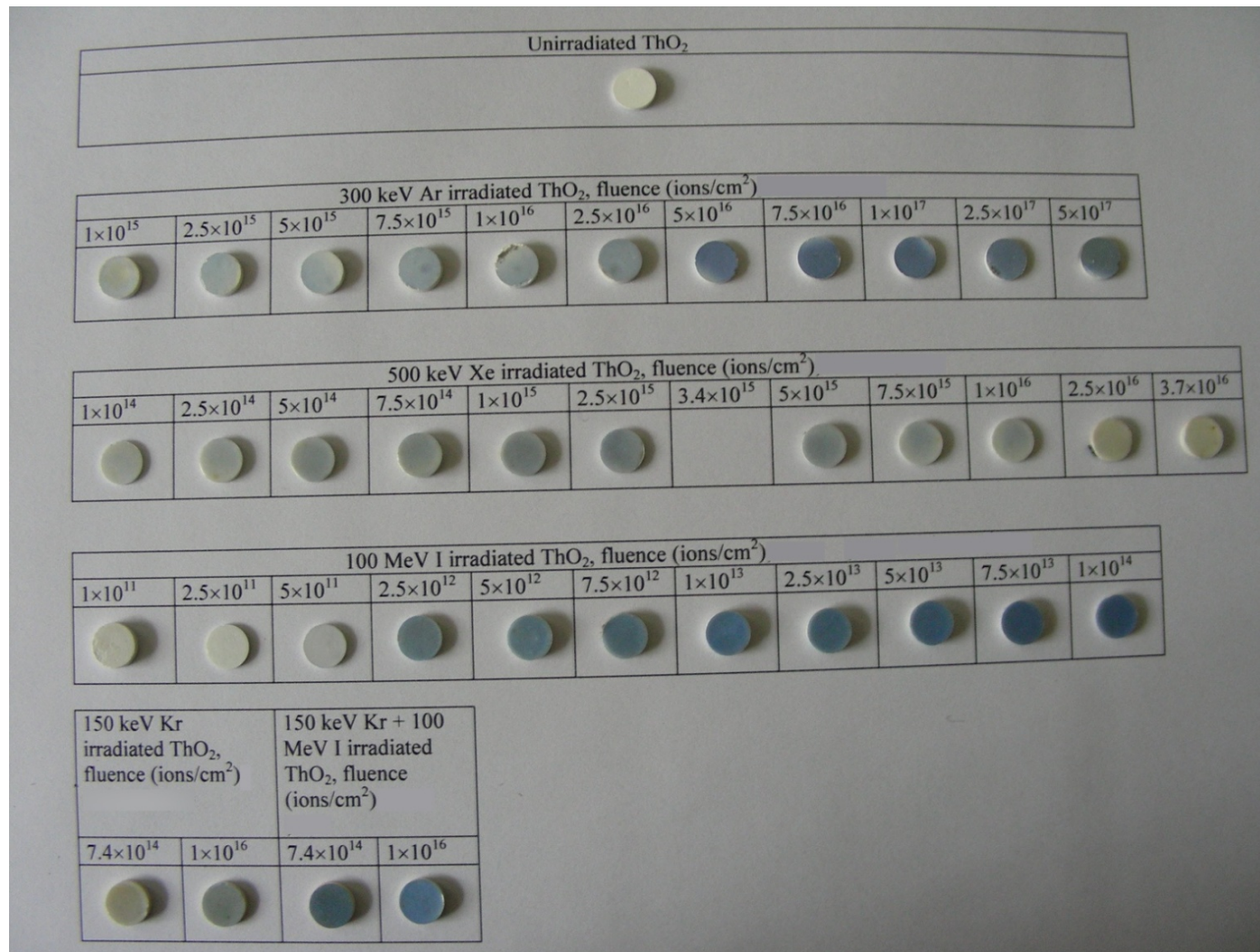
Non-stoichiometric oxides



Non-stoichiometric oxides in fuel

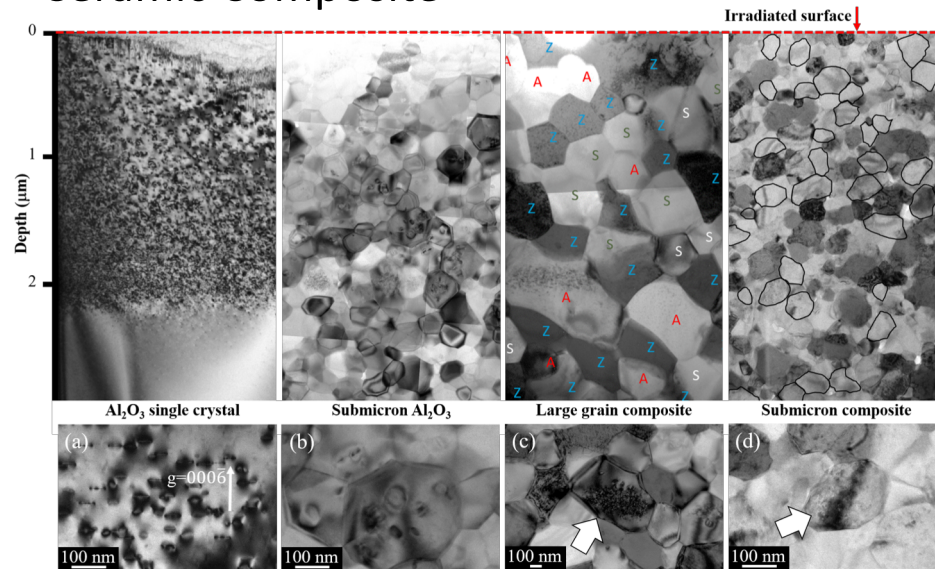


Radiation damage in ceramics

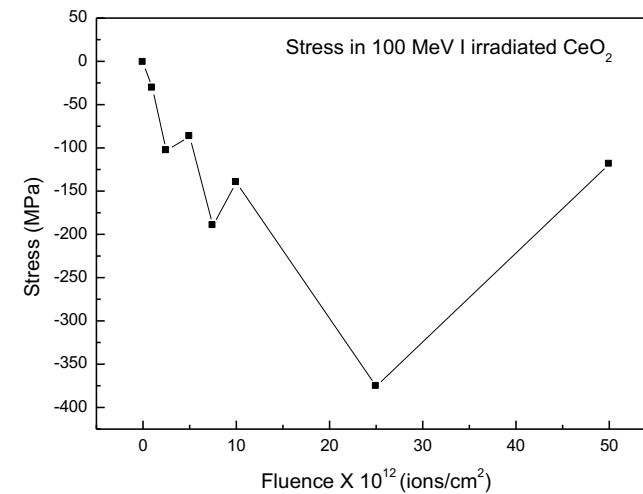
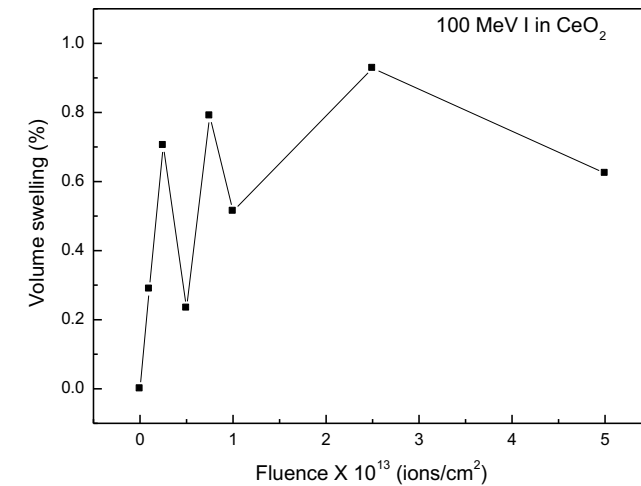
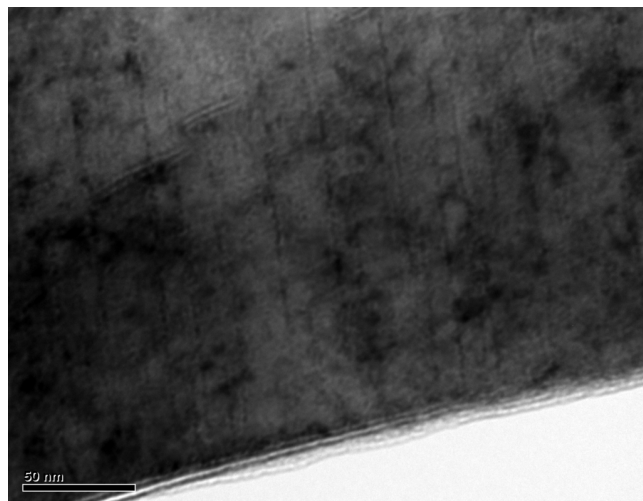


Radiation damage in ceramics

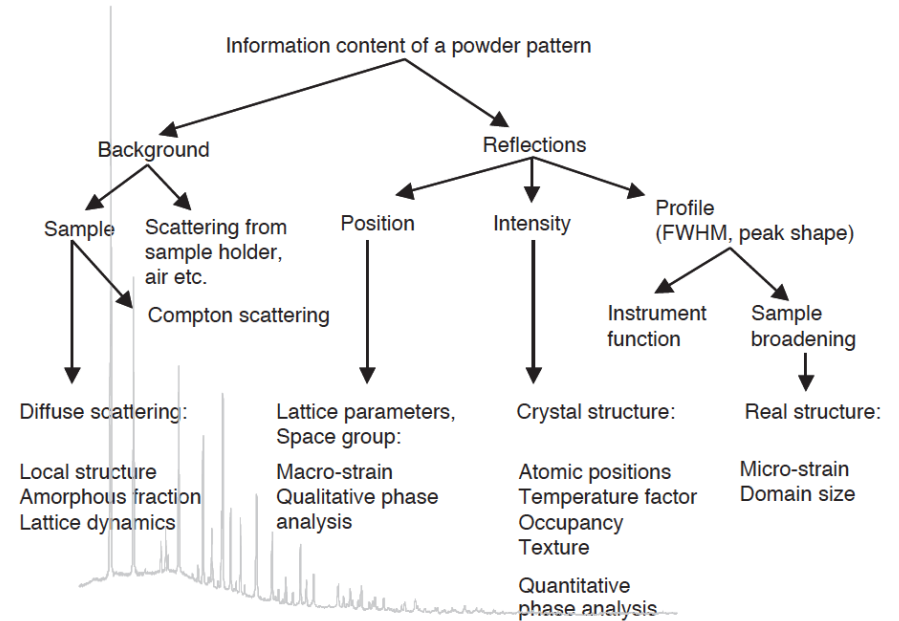
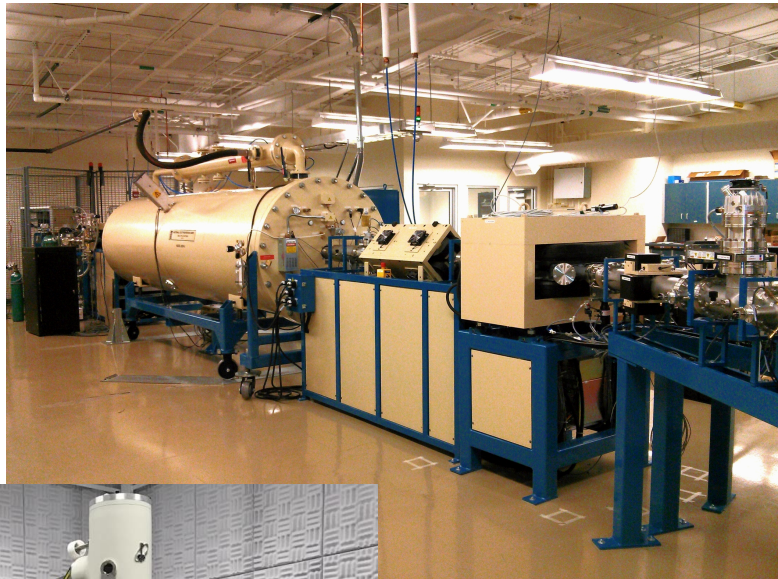
Ceramic Composite



Fission ion
tracks in CeO₂



How we do it..



Summary of research interests

- **Phase stability and crystallography of complex oxides**
- **Radiation effects in materials**
 - **Rate effects ?**
- **Synergistic effects of radiation + high temperature + corrosion**
- **Phase stability of glass and glass-ceramics**
- **Radiation for materials processing**
- **Develop scattering techniques for quantifying radiation effects**



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Thank you

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