

UCLA FNT Program Participation in ITER (Hopefully!)

*Neutronics: Discussed later

*Test Program

- Lead the US effort (and hopefully the international)
- Sufficient resources at UCLA and other organizations to do the job
- [DEMO Blanket Study effort should help]

*FW/Blanket/Shield

- We want to play a key role in the design area
- R&D in thermomechanics, tritium transport and fuel cycle
- [We have a unique, broad and deep experience in non-breeders, solid breeders and liquid metals. Limiting effort in US to organization is risky]

*PFC Area

- Modest effort to keep small innovative program

UCLA Fusion Nuclear Technology

Key Areas of Emphasis

1. Neutronics
2. First Wall/ Blanket Thermomechanics
 - Small scale experiments
 - Models (e.g. interface h, bulk k_{eff} for metals and ceramics)
3. Tritium Transport and Fuel Cycle Modelling
 - Models
 - Analysis of experiments
4. Test Program in ITER
5. Plasma-Facing Components
 - liquid metal divertor experiment and model
 - tritium permeation
 - innovative designs
6. FW/Blanket Shield Design
 - Support ITER
 - ICF
 - DEMO

UCLA FNT Program

Objectives

- *Make a major contribution to resolving the critical issues for FNT
- *Train graduate students

Approach

- *Concentrate on building models and versatile small scale experimental facilities to help in critical issues for ITER and DEMO
- *Select those critical issues where modest effort can solve big problems
- *Integrated Team of bright Graduate Students and Experienced Research Staff
 - Doctoral Thesis Topics in key areas where dedicated in-depth effort on particular problem is needed (e.g. modelling tritium transport)
 - Research Staff lead the day-to-day activities and interact with scientists in the field
- *Strong Collaboration with others nationally and internationally
- *"STAY AT THE TOP OF THE FIELD"