

**SUMMARY OF TECHNICAL SESSION III:  
SUBCRITICAL SYSTEM DESIGN AND ADS SIMULATIONS**

*Chairs: W. Gudowski, H. Oigawa*

## Categories of presentations

- Research/demo facility design described or referenced to:
  - Kyoto, MYRRHA, TRADE.
- Conceptual design of full-scale transmuter:
  - Burn-up swing and CSMSR.
- Design of ADS – components:
  - MYRRHA vessel studies, accelerator and BTL for TRADE.
- Benchmark on beam interruptions.

## Research/demo facility design

- More international harmonisation would be beneficial for many parties (the same is valid for Pb/Bi technology experiments):
  - Similar experiments are under preparation or planned – better focus and task distribution would be desirable (*probably not easy to agree upon*).
  - *Real accelerators are going to be coupled with subcritical cores in the near future.*
  - **ADS, demo, PoP, etc. facilities should have clear objectives, *internationally harmonised*, in order to focus on investigation of important parameters for a real transmutation facility without unnecessary duplications.**
    - *RACE experiment in US not reported.*
    - *SAD (Russia, ISTC) not reported.*

## Conceptual design of full-scale transmuter

- Visible convergence for Pb/Bi system design concerning:
  - Power (800 MWth).
  - $K_{\text{eff}}$  (0.97).
  - Fuel options (nitride intensively studied but not exclusively).
- Big variety of core designs, we consider that there is great potential to optimise ADS performance.
- Variety of fuel compositions and fuel cycle.

- Fast information exchange between different groups is definitely beneficial for the progress of ADS concepts.
- Interesting alternative options for ADS under investigation; we would like to have a bit more clarity on CSMSR.

### **Design of ADS – components**

Very interesting engineering work taking us closer to practical solutions.

- Even if the choice of accelerator is still an open question, it is clear that first PoP experiments will be done with cyclotron (Kyoto, TRADE, SAD, etc.).

### **Benchmark on beam interruptions**

Easy conclusions:

- Everybody happy with benchmarks so time for validation activity.
- Time for an international *validation experiment*? Should it have been planned already? Can we use existing facilities? Should we take into account facilities under advanced planning/construction?
- Any role for OECD/NEA?

### **Final conclusions**

- Interesting session covering very different topics with direct links to other sessions.
- Final recommendations/advice to participants and OECD/NEA should be done based on synthesis of all sessions.

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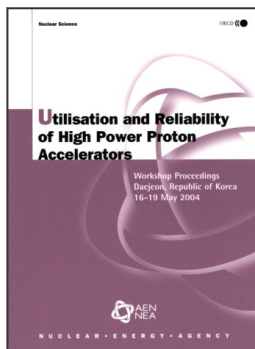
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