

# International Conference on Fast Reactors and Related Fuel Cycles FR22: Sustainable Clean Energy for the Future (CN-291)

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## **ALFRED High priority R&D Needs**

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The identification of the R&D priorities and needs is a necessary step to complete the development, up to the qualification and demonstration, of the solutions envisaged for LFR technology. In particular, this is of paramount importance to allow the design, licensing and construction of industrial systems.

In the present work, starting from the key scientific aspects (including lead chemistry monitoring and control, thermal-hydraulics in large pools, components qualification and integral system operation), the necessary experimental activities are identified in support of the ALFRED safety demonstration program.

According to the identified R&D needs and considering the current status of the ALFRED conceptual design as well as of the research infrastructures' implementation in Romania, a prioritization of activities is also proposed, which takes into account also the actual worldwide level of knowledge on the LFR technology.

Finally, by taking advantage of the experimental activities, the needs for Verification and Validation (V&V) of the computational tools to be used for safety demonstration are also aligned.

### **Country/Int. organization**

Italy

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