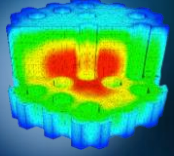



The Validation of Advanced Modeling and Simulation Tools: Experimental Challenges

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Building Confidence in Modeling and Simulation Results

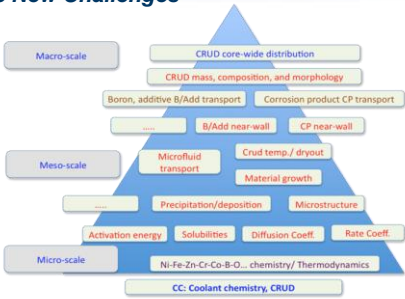
- The usefulness of modeling and simulation is only as good as the confidence end users have in the results
- There are many things that are involved in creating that confidence
- The availability and applicability of good experimental data for validation is critical to building that confidence

We (almost) have the theoretical and computational power to validate AMS tools. But we might not have all the needed data.

- NEAMS and CASL are using the Predictive Capability Maturity Model (PCMM) to build "evidence packages" that will lead to user confidence. These will include information on:**
 - Representation and geometric fidelity,
 - Physics and material model fidelity,
 - Code verification,
 - Solution verification,
 - Model validation, and
 - Uncertainty quantification and sensitivity analysis
- While new more "fundamental" codes might reduce the need for more integral experiments, they also create new challenges for experimental validation**

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The New Challenges



Coolant chemistry/CRUD dimension of the CIPS framework

3
