

OVERVIEW OF U.S. FUSION SiC/SiC ACTIVITIES

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OVERVIEW OF U.S. FUSION SiC/SiC ACTIVITIES



- Fiber properties
 - strength of advanced fibers
 - radiation effects on dimensional change, thermal conductivity, strength.
 - irradiation creep
- Thermal conductivity
 - in situ measurements: TRIST-TC1
 - thermal conductivity vs T: fibers
 - irradiation effects on fibers and composite

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- Materials development
 - composites with advanced fibers: Hi-NicS, tyranno SA, MER beta SiC fibers/crystalline matrix.
 - interface development.
 - high thermal conductivity: z stitched C fibers.
- Properties of composites
 - radiation effects on dimensional stability, thermal conductivity and strength.
 - uniaxial, 2-d and 3-d fiber orientations
- Materials Joining

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■ Irradiation experiments

- HFIR:

- + monolithic SiC, fibers, advanced composites

- + in-core- 12J: 500 C, 14J: 800 C, a few dpa

- + rabbit positions: 600-1500 C, void swelling, etc

- ATR: fiber creep with KAPL

- HFR: with Petten

- He implant studies: with ISPRA and JUPITER prog.

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■ Collaborations

- JUPITER: all aspects
- JRC-Ispra: fiber creep, He implantation
- Petten: irradiations
- IEA
 - + workshops
 - + collaborative experiments