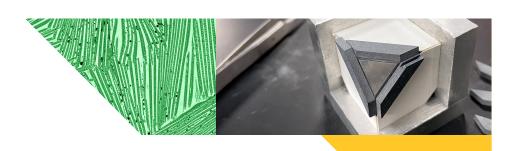




Facility for Open Research in a Compressed Environment

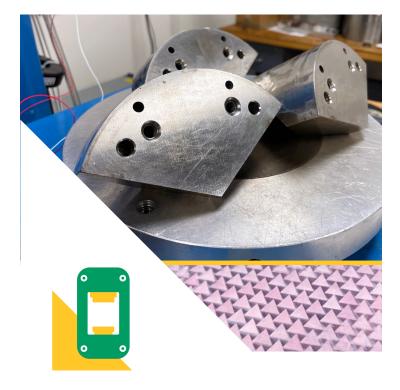


FORCE details & dates

\$13.7 million NSF grant for world-leading research at ASU

In September 2021, the National Science Foundation's Mid-Scale Research Infrastructure 1 (RI-1) program awarded ASU a \$13.7 million grant to establish a national user facility for high-pressure research at ASU. FORCE will serve a broad range of disciplines including geological sciences, mineral physics, materials science, quantum materials, and chemistry.

PI: Kurt Leinenweber | SMS, Eyring Materials Center
Co-Is: Alexandra Navrotsky | SMS, SEMTE, SESE
Thomas Sharp | SESE
Dan (Sang-Heon) Shim | SESE
David J. Smith | Physics



Learn more about FORCE at force.asu.edu





FORCE is unique

FORCE brings together a unique set of experimental capabilities that are unavailable anywhere else in the world.

The press hall will feature four major pieces of equipment:

- 6000 ton Kawaii-type multi-anvil press "Ichiban" –
 the only of its kind outside of Japan, this press will allow
 for ultra-large sample volumes synthesized up to 25 GPa
- 1500 ton DIA cubic-type multi-anvil press "Jasmine" –
 using sintered diamond anvils, large-volume samples can
 be synthesized up to 100 GPa
- 500 ton torsional press "Twister" this press will be used to study material behavior and phase transitions caused by strain up to 6 GPa
- Internally-heated pressure vessel (IHPV) this gas apparatus will condition samples up to 0.6 GPa for studies of planetary crust and upper mantle and for use as starting materials in the presses

Construction Timeline

Dates for equipment are estimates for completion of testing & certification

05/11/2023 FORCE Lab Construction Begins

09/14/2023 Twister Installation

11/17/2023 Ichiban Installation

01/30/2024 IHPV Installation

08/14/2024 Jasmine Installation

10/01/2024 FORCE Lab Construction Complete

Questions?

Please contact Kara Brugman, Research Scientist & Outreach Coordinator | <u>kara.brugman@asu.edu</u>