

Hot Press

Dalhousie Facilities for Materials Characterization

Dr. Kevin Plucknett – (902) 494-3297

Kevin.Plucknett@dal.ca

ctri@dal.ca

High-temperature press for materials synthesis

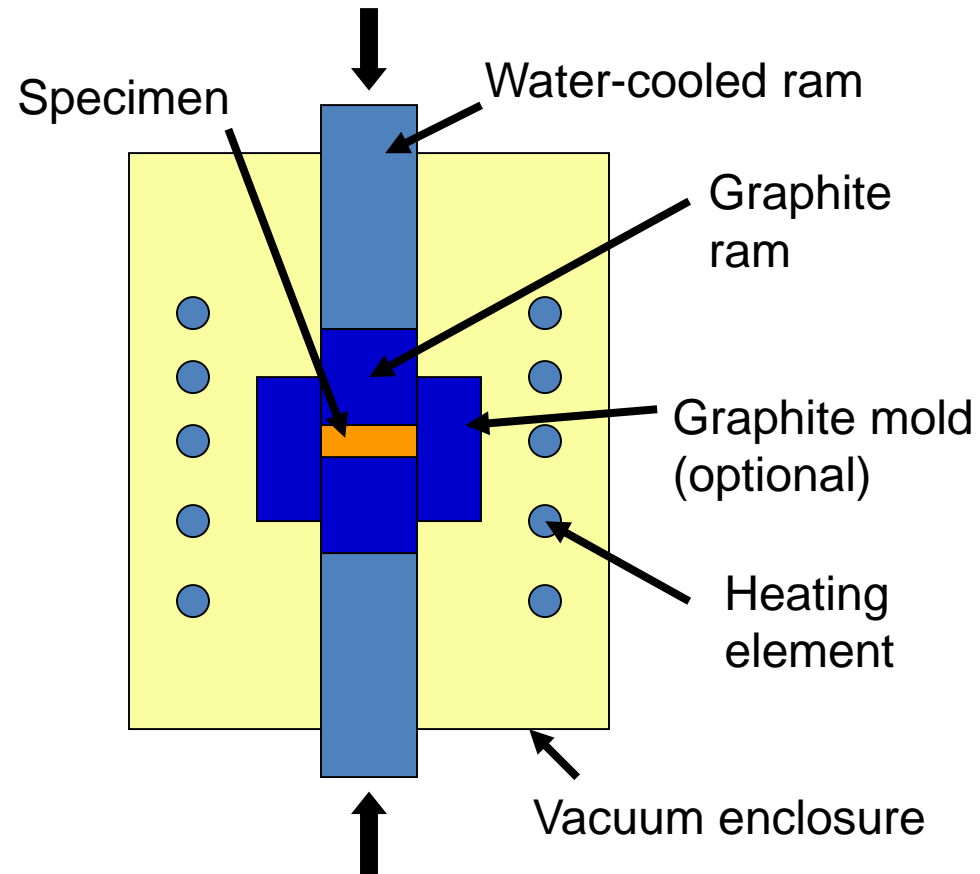
The hot press is unique in Atlantic Canada, offering a wide variety of loads and temperatures for batch processing of materials.



Simultaneous compression heating of samples

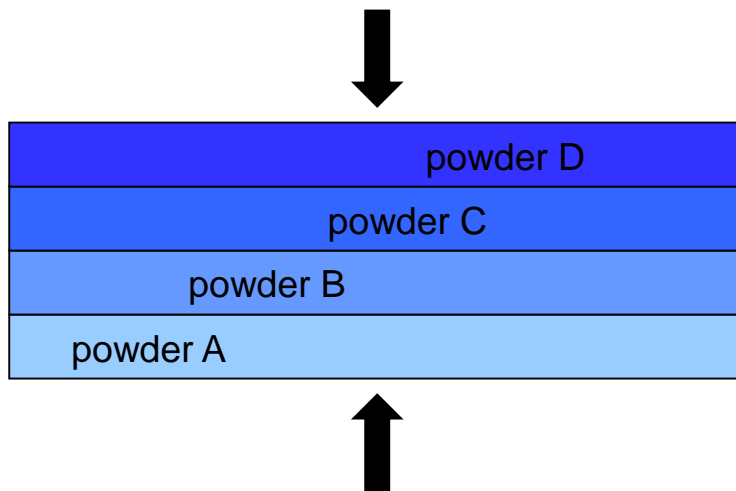
Specifications:

- Full 12 inch diameter hot zone.
- Operate under vacuum or inert gas atmosphere.
- Fully programmable load and temperature control to allow complex processing cycles.
- Max temperature: 2300 °C
- Max load = 50 tons
- Can be operated as a batch furnace (rams removed) up to 2500 °C
- Capable of extended duty cycles.



Applications

Sintering of powder samples for preparation of unique materials, such as functionally graded ceramic or metallic composites.



Applications

Combinatorial materials synthesis via diffusion couple:

Two blocks of high-purity material are carefully polished, placed into intimate contact with one another, and hot pressed. **Interdiffusion** occurs, resulting in a material with smoothly varying composition, which can then be evaluated rapidly to find the optimal composition for a given application.

