Effects of Carbon on the Processing and Thermal Properties of Hot Pressed ZrB2

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Goals of the Current Work

• Investigate the inherent properties of high-purity ZrB$_2$ ceramics

• Isolate the impact of carbon on hot pressed ZrB$_2$
  – Densification
  – Microstructure
  – Thermal properties

• Study the solubility of carbon in ZrB$_2$ and its effect on the densification, microstructure, and thermal properties
Carbon Content Measurement

1 wt% ZrH₂ Material

- High Carbon
- Low Carbon

Measured Carbon Content (wt% C) vs Carbon Addition (wt% C)