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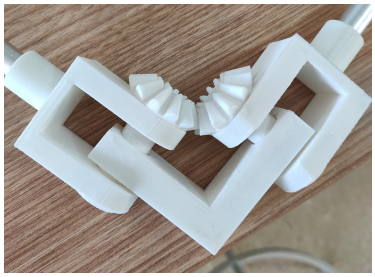
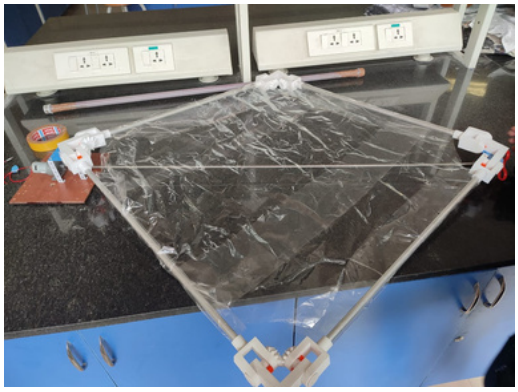
HEAT-SHIELD DEPLOYMENT MECHANISM





What?

- Design and fabricate a device for the **deployment of a heatshield**, employing components of simplified nature.

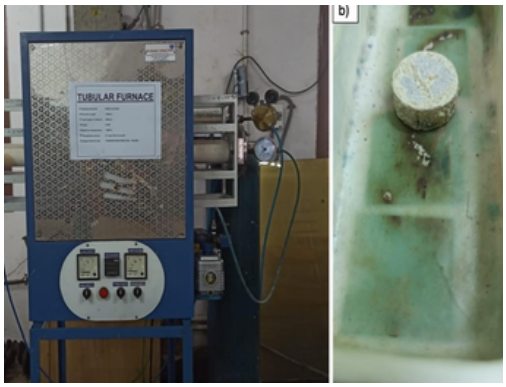
How?

- Used **part design** features in **SolidWorks** to design this
- Applied **GD&T** on all drawings
- fabricated using additive manufacturing

Results

- Efficient square frame design: 23 times larger deployed area.
- Energy-efficient: single motor for full deployment.
- Simple design enables swift issue resolution.

SIC-ZR REINFORCED ULTRA HIGH TEMPERATURE CERAMIC COMPOSITES WITH ENHANCED MECHANICAL AND THERMAL PERFORMANCE FOR AEROSPACE APPLICATIONS



What?

- developing a SiC-Zr Reinforced Ultra high temperature ceramic composites

How?

- Process: Milling, green compacting, sintering.
- Characterization: XRD, SEM, TGA, DSC for phase, microstructure, thermal stability.
- Mechanical assessment: Vickers hardness, tensile, flexural, fracture toughness.

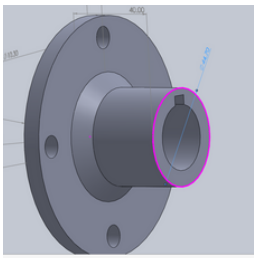
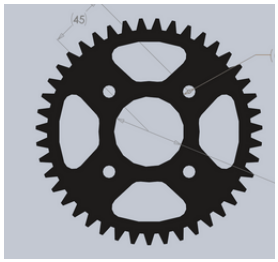
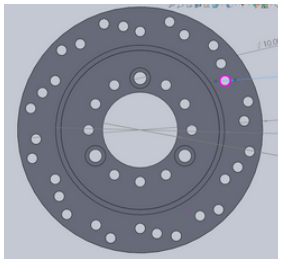
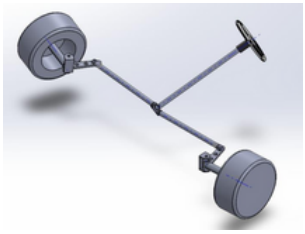
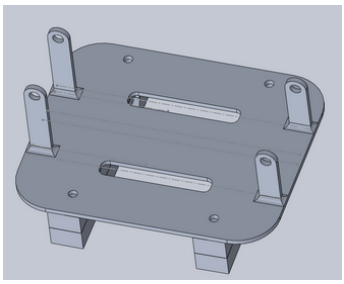
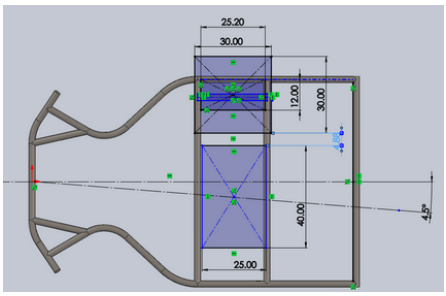
Results

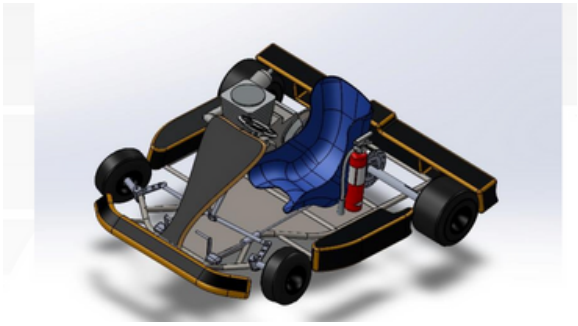
- ·As the temperature increased to 1600 ° C the density of the sample was increased by 4.599 %.
- ·The microhardness of the samples was increased by 23.63%.
- Consistent densification mechanism: grain boundary densification, regardless of sintering temperature fluctuation

DESIGN AND DEVELOPMENT OF A GO-KART

What?

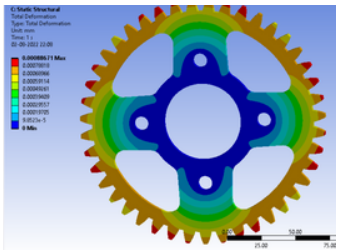
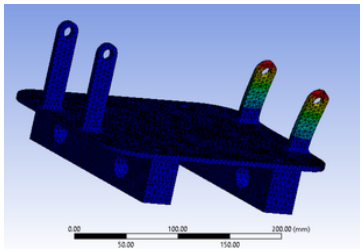
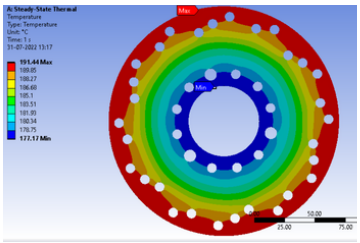
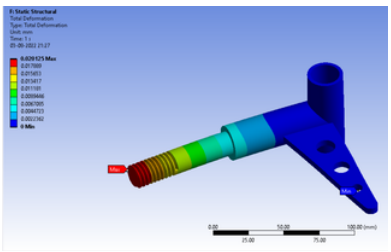
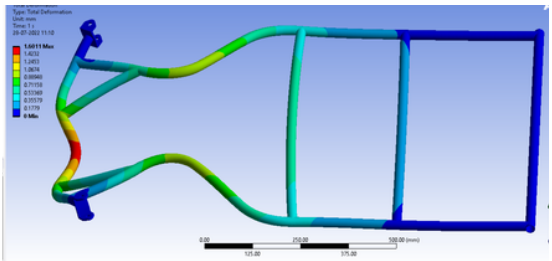
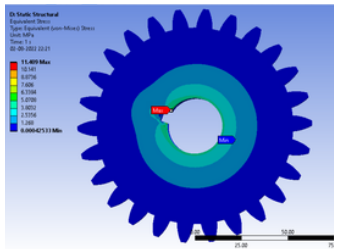
- design and fabrication of go-kart components using SolidWorks, translating engineering requirements into precise 3D models that adhere to functional and performance specifications.



How?

- Used **part design** features in **SolidWorks** to design and applied **GD&T** on all drawings.
- Used **ANSYS** simulation to carry out the impact, stress, thermal, fatigue, vibration analysis on all the components.
- Iterative design refinement for **performance and safety.**

Results

- Developed a kart with good streeing stability
- developed an innovative design using double sprockets for maximum speed and torque.
- Places **AIR 4** in the INDIAN KARTING CHAMPIONSHIP and **1st** in DESIGN.