P09221: Innovative Composite Parts for a Formula SAE Racecar

Project Manager: David Holland

Website:
https://edge.rit.edu/content/P09221/public/Home
History of R · I · T Formula SAE

F1 – 8th Place
Rookie of the Year

F2 – 2nd Place

F3 – 2nd Place

F4 – 2nd Place

F5 – 3rd Place

F6 – 5th Place

F7 – 2nd Place Detroit, 1st Place England

F8 – 14th Place Detroit,
6th Place England, 2nd Place Australia

F9 – 21st Place Detroit,
4th Place England, 1st Place Australia

F10 – 20th Place Detroit,
3rd Place England, 3rd Place Australia
History of R · I · T Formula SAE

F11 – 12th Place Detroit, 5th Place in Australia

F12 – 22nd Place Detroit, 2nd Place in Composites Award, 3rd Place in Brake System Award, 1st place in PBR brake award, 5th place in Australia, 2nd in acceleration

F13 – 16th Place in Detroit, 3rd place in Composites Award, 6th place in design, 2nd place in sales and presentation

F14 – 12th Place in Detroit, 4th place in endurance 5th place in California, 4th place in endurance

F15 – 7th Place in Detroit, 6th place in endurance 5th place in Germany, 4th place in endurance
History of R · I · T Formula SAE

F16

Detroit (27/120)
- Skidpad: 3rd Place
- Autocross: 3rd Place
- Acceleration: 2nd Place
- Cost: 2nd Place
- Endurance: DNF

Germany (28/60)
- Skidpad: 3rd Place
- Autocross: 9th Place
- Acceleration: 3rd Place
- Cost: 2nd Place
- Endurance: DNF
Project Description

- **Goals:**
  - Design and fabricate innovative, high performance composite parts with intent of placing RIT back on top of competition.
    - Composite parts include monocoque chassis and aerodynamics package.

- **Positions Desired on SD Team:**
  - 5 Mechanical Engineers (all slots filled).
  - 1 Electrical Engineer (open).
Position Roles/Responsibilities

- **5 Mechanical Engineers:**
  - Manufacturing and testing of composite coupons
  - Design, analyze, manufacture, and test carbon monocoque
  - Design and manufacture jigs and molds for carbon monocoque
  - Source carbon prepreg, autoclave, tooling board, aluminum, etc..
  - Full aerodynamic evaluation and validation of aerodynamic package (including racecar geometry, ducts, etc…)

- **1 Electrical Engineer**
  - Design amplifier and wiring harness for strain gage data acquisition
  - Ensure EMI isolation with new CDI (capacitive discharge ignition) box location

- **Faculty Advisor: Dr. Alan Nye**
Contact Information

- David Holland, Project Manager:
  - dmh9993@rit.edu

- RIT Formula SAE Racing Team
  - formula@rit.edu