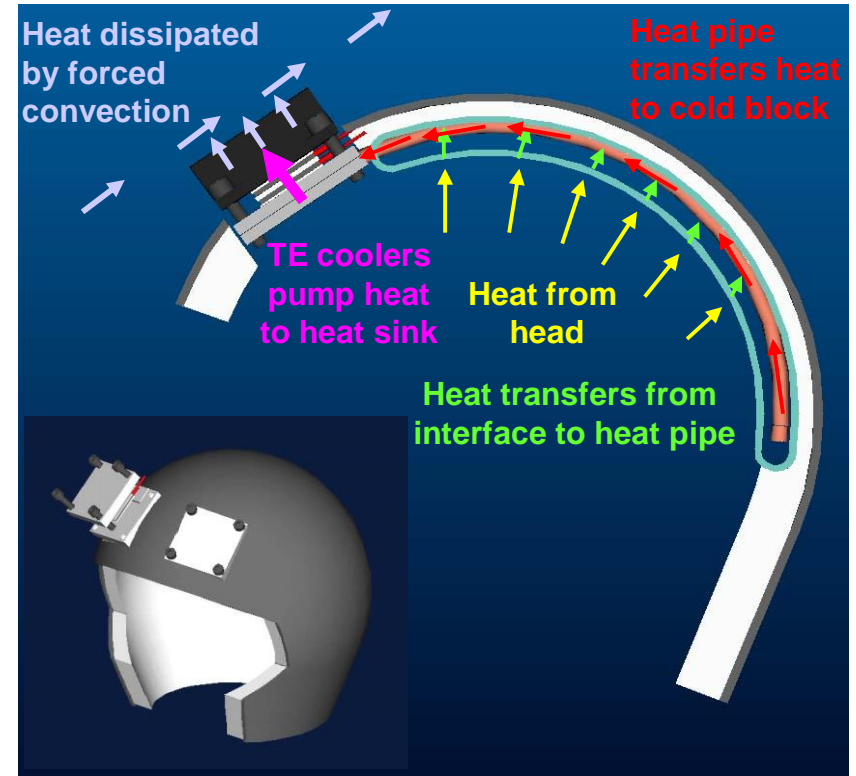


Cooling Helmet

Team: Roger Johnson, Vincent Leman, Balbir Singh, and Saksarun Thavikulwat



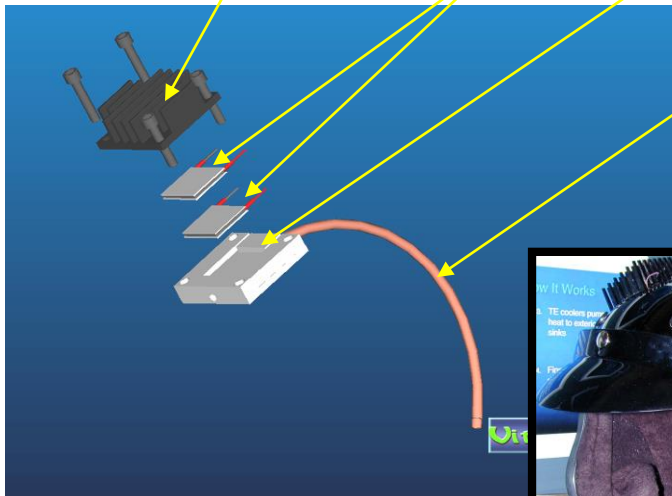
How It Works

Problem Statement

Conventional helmets are uncomfortable during summer because heat generated from the head is trapped between head and helmet

Heat Sink TE coolers Cold Block

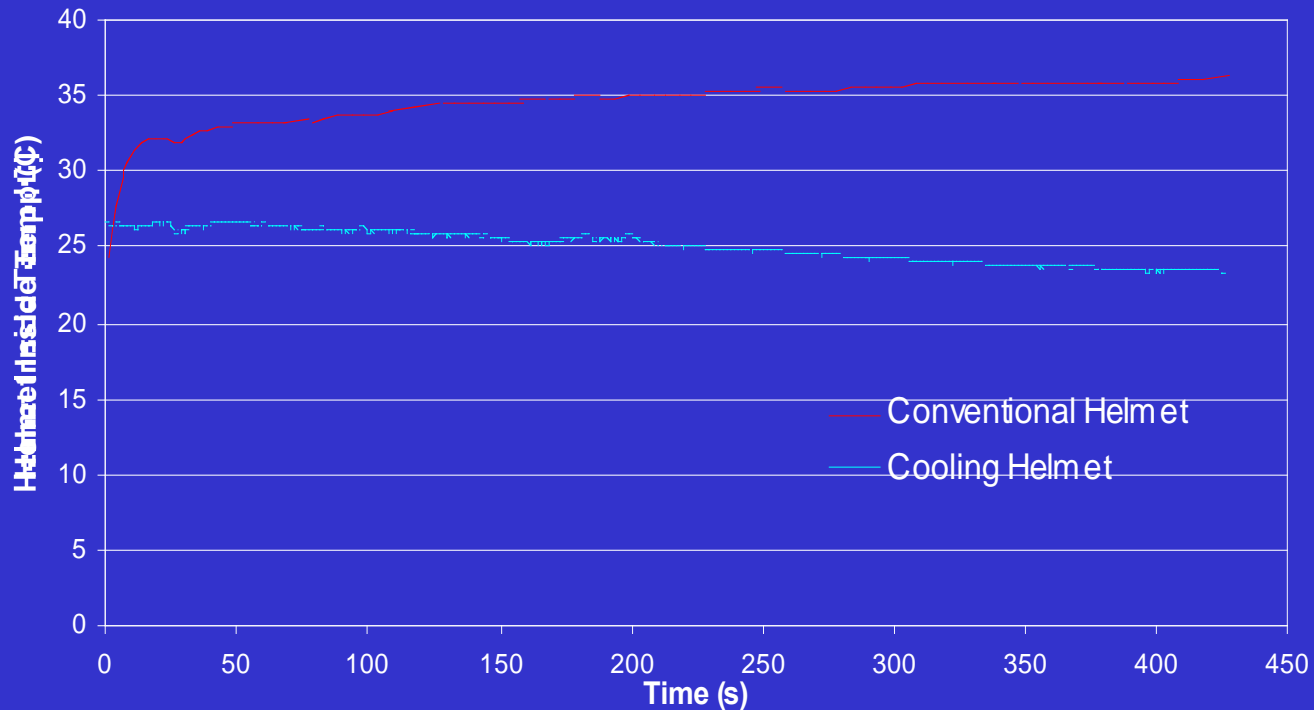
Heat Pipe



Cooler Assembly



Helmet Inside Temperature vs. Time



Benefits

- No additional equipment needed external to the helmet
- No moving parts
- Adjustable voltage
- used available (battery) power supply from motorcycle
- Can also be used in winter as a heater simply by reversing thermoelectric cooler polarity

Results

- For about same ambient temperature of 23 ° C, helmet inside temperature was 23.4 ° C with cooler compared to 36.7 ° C without it
- Cooler dissipated 12.9 W from driver's head
- Helmet was very comfortable to wear