

# My contribution to Team Eta

## (Co-curricular activities)

### Chassis Team Lead (Shell ECO Marathon 2014 & 2015):

- Led a team of two students, analysed different aluminium grades (6061-T6, 6063-T6) and incorporated manufacturing technologies such as laser profile cutting, tube bending and fixture design to fabricate a space frame chassis.
- Designed and developed an ergonomic and lightweight space frame chassis using SolidWorks and structural simulations on ANSYS.
- Incorporated a side geometry that enhanced load distribution and reduced material.
- Increased number of Bent pipes to reduce the number of joints, after annealing of aluminium pipes bending was done followed by Tempering (T6) to achieve high strength.
- Lowered the centre of gravity by 5% which allowed lateral accelerations.
- Developed fixture setups that allowed manufacturing pickup points on the frame within an error of 1 mm, verified using a coordinate measuring machine.
- Reduced the frame weight by 20% with a 9% improvement in stiffness in 2014 compared to the 2013 design.
- Reduced the frame weight by 6 kgs with constant stiffness in 2015 compared to the 2014 design.

### Chassis & Fabrication Fixture Design Shell Eco-Marathon 2015 :



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