

# International Advanced Research Centre for Powder Metallurgy & New Materials (ARCI)

Balapur P.O., Hyderabad – 500005, Telangana, India



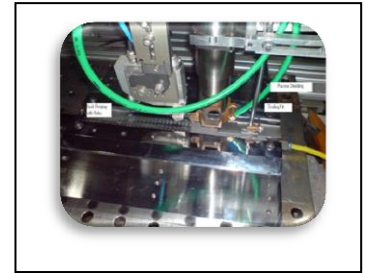
## Laser Welding of Titanium alloy Ti-6Al-4V

### Overview

Due to high reactivity of titanium, especially at elevated temperatures, it reacts strongly with most atmospheric elements like, oxygen, hydrogen, nitrogen, etc. and gets embrittled readily. Hence, elaborate shielding arrangements are required while welding and often electron beam welding is preferred as it is done in vacuum. Laser Welding with simple and effective shielding arrangement has been proven to be techno-commercially feasible joining technique as compared to Electron Beam Welding.

### Key Features

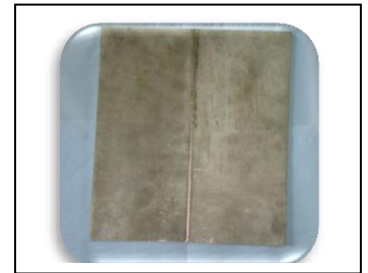
- Localised inert gas shielding set up.
- Welded joint made with square and lip joint configuration on 4mm thick sheets with 100% joint efficiency.



Shielding arrangements for Laser welding

### Potential Applications

- Aerospace
- Chemical industry
- Medical industry



Laser Welded Ti6Al4V plates

### Intellectual Property Development Indices (IPDI)

- Performance and stability are validated at coupon level

Status	1	2	3	4	5	6	7	8	9	10
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### Centre for Laser Processing of Materials (CLPM)

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