

Ceramic radomes

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In news- Recently, Carborundum Universal Limited (CUMI) has signed a Licensing Agreement for Transfer of Technology with the DRDO for manufacturing ceramic radomes used in aerospace and missile systems.

What is Ceramic radome technology?

- **Ceramic radome is regarded as an essential, state-of-the-art technology for ballistic and tactical missiles and high-performance aircraft.**
- Missiles undergo extremely high surface temperatures while travelling through the atmosphere, and while re-entering it from space.
- To withstand those temperatures, radomes located at the tip of a missile are made of ceramic.
- **The ceramic radomes have been developed indigenously by Research Centre Imarat (RCI), one of the premier DRDO labs** in the Dr APJ Abdul Kalam Missile Complex, which has developed India's missile arsenal. RCI spearheads R&D in a diverse range of avionics systems for missile and aerospace applications.
- RCI is India's premier laboratory for carrying out R&D in the technologies of control engineering, inertial navigation, imaging infrared seekers, radio frequency seekers and systems, on-board computers and mission software.

Carborundum Universal (CUMI) Ltd-

- Carborundum Universal Ltd, a part of Murugappa Group, is **one of the largest and oldest conglomerates in India.**
- **It is the leading manufacturer and developer of abrasives, ceramics, refractories, aluminium oxide grains,** machine tools, polymers, adhesives and electro minerals in India.

- It has extensive experience in engineering lightweight ceramic ballistic solutions, such as bulletproof vests, using zirconia-toughened alumina and silicon carbide.
- CUMI's lightweight ceramic materials are also used for providing high levels of ballistic and blast-proof protection for armoured vehicles.
- **It is one of India's first companies to produce the wonder material graphene for aerospace** and defence applications. Its cutting-edge composite technology is also used for building unmanned aerial vehicles.
- CUMI, **established as a tripartite joint venture in 1954**, is a leading materials sciences engineering solutions provider.