



TECHNOLOGY DEVELOPMENT FUND (TDF) SCHEME



11

TITLE: HIGH PURITY SILICON CARBIDE SOURCE POWDER FOR BULK GROWTH OF SILICON CARBIDE SINGLE CRYSTALS

1. **Description:** DRDO is actively involved in the development of GaN based EMT & MMIC for high power and high frequency electronic device application. DRDO has been working on 4" dia. SiC bulk single crystal growth and wafer fabrication technology. For the bulk SiC single crystal growth, high purity SiC poly crystalline source powder has starting material is an essential requirement.

High purity SiC powder (≥ 6 N purity) is required for the semi-insulation and n type growth of SiC single crystal. To enhance the impurity from 2N to 6N is the requirement.

It is based on materials/synthesis and purification technology area.

2. **Functional and Operational requirements:** It should have high purity SiC source powder with particle size range 200-2000 micron. It should be non-toxic and non-hazardous or under permissible limit. It should have shelf life of at least 2 years with high usability and high purity.
3. **Testing and certification requirements:** GDMS and SIMS analysis required to ascertain the purity of synthesized SiC source powder as per the specification. No certification required, however purity analysis report from the foreign private vendor shall be required.

--End of Document--



TECHNOLOGY DEVELOPMENT FUND (TDF) SCHEME



FEASIBILITY CUM RFI RESPONSE FOR THE PROJECT REQUIREMENT UNDER TDF SCHEME (PROFROMA)

1. **Name of the Institute** (Industry/Academia):
2. **Contact details:**
 - a. Email
 - b. PoC
 - c. Address
3. **Title of the project requirement:**
4. **Project Description** (Define broad understanding of the project requirement and proposed solution under the project).
5. **Briefly detail the proposed technical solution in terms of subsystem/submodule levels.**
6. **Road map for achieving the proposed outcome (Development Plan Phase wise -Max 5 phases).**
7. **Development and production Estimates:**
 - i. Estimated time required for development of the proposed technology /product (In Months).
 - ii. Estimated cost required for the for development of the proposed technology /product (BQs of submodules/subsystems if any pls attach).
 - iii. Estimated production cost of the end product after successful development (per unit or batch cost).
 - iv. Whether the industry has already done any Suo moto design and development of the proposed product/technology at Technology Readiness Level – Yes/No
 - v. Details of Suo moto design and development done if marked Yes in previous question (within 250 words).
 - vi. Essential infrastructure required for development of the proposed product/technology for which funding is required.
8. **Technical strength in terms of manpower.**
9. **Relevant Work Experience.**
10. **Any other relevant information**

Queries if any and the reply in PDF FORMAT to be submitted online addressing to:

TO,

THE DIRECTOR TDF, DRDO

DRDO BHAWAN, RAJAJI MARG, NEW DELHI 110011

Email to, arjunk.hqr@gov.in, CC to dir.tdf-drdo@gov.in.