श्री चित्रा तिरुनाल आयुर्विज्ञान एवं प्रौद्योगिकी संस्थान, जैवचिकित्सकीय प्रौद्योगिकी स्कंध
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(एक राष्ट्रीय महत्व का संस्थान, विज्ञान एवं प्रौद्योगिकी विभाग, भारत सरकार)
SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES AND TECHNOLOGY
BIO MEDICAL TECHNOLOGY WING
POOJAPPURA, TRIVANDRUM – 695 012, KERALA, INDIA
(An Institution of National Importance, Dept. of Science and Technology, Govt. of India)
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BMT-Purchase & Stores/Tender Notice/SCTIMST/2025-26 Dated: 29.10.2025

TENDER NOTICE

Sealed quotations are invited from interested firm for the Development of an Automated Portable Cardiopulmonary Resuscitation (CPR) System.

Details of Work: This project focuses on the creation of an innovative, portable device to automate the process of Cardiopulmonary Resuscitation (CPR), crucial in emergency medical care.

Objective: Designing and fabricating a lightweight, easy-to-use automated CPR system suitable to provide consistent and efficient chest compressions and decompressions during CPR and negative pressure ventilation.

Scope of Work:

- **Consultancy for Machinable Drawings:** Consultancy services to convert the conceptual design into machinable drawings, suitable for fabrication.
- **Consultancy for Mechatronic System Design**: Consultancy services to design optimized electronic and mechanical modules along with programming for the mechatronic system,
- **Design to Prototype Development:** Transforming the conceptual design into a proof-of-concept functional prototype.
- **Fabrication of Proof-of-Concept:** Constructing a working model of the device to demonstrate its feasibility and functionality.
    - The automated CPR system to be demonstrated on a mannequin.
    - The system should be portable and convenient in setting up in case of emergency
- **Pre-Clinical Testing:** Testing the prototype for performance, repeatability, and reliability on a mannequin.

Required features:

- Automatic and adjustable compression depth ranging from 4 cm to 6 cm.
- Adjustable compression rate between 100 and 120 compressions per minute, in line with current CPR guidelines.
- Negative pressure ventilation at the rate of 10-15/minute
- Overall weight: <15kg

- Ergonomic and anthropometrically feasible dimensions to ensure ease of fitting, handling and transportation.
- Simple, intuitive controls for easy operation under stressful conditions.
- Compression piston with soft cushion at the contact point.
- Emergency stop button to immediately halt compressions if necessary.
- Built-in system to detect improper placement or potential harm to the patient.
- Compatible with standard CPR protocols and can be used alongside defibrillators.
- Capability to record and display CPR quality data (compression depth, rate, force etc.) for medical review.
- Rechargeable battery-powered or AC line (230V, 50Hz) source powered system. Battery rechargeable inside ambulance
- Backplate for laying patient and should be attached to CPR hood
- Easily detachable quick release mechanism for backplate disassembly
- Pulse oximeter and Oxygen mask & PEEP Valve units to be included.
- Vacuum reservoir and vacuum holding system for supporting adequate negative pressure ventilation.
- CPR hood provided is for negative pressure ventilation that can be easily handled and can hold vacuum inside.

Interested firms may submit the quotation in sealed cover, addressed to the **Sr. Purchase and Stores Officer, Biomedical Technology Wing, Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST), Poojappura, Thiruvananthapuram-695012 on** or before **13.11.2025** Late tenders will not be accepted.

In case of any further clarifications with regard to submission of tenders please be free to contact Purchase and Stores Division, BMT Wing well in advance before closing date of tender. (Ph.:0471-2520228/2520338/328). For technical enquiries please contact Dr.Arun Anirudhan, Ph: 9495983679.email id: arunanirudhan@sctimst.ac.in

Last date of receipt of tender either through post/by hand or email- bmtstp@sctimst.ac.in, bmtoss@sctimst.ac.in, bmtsto@sctimst.ac.in is **13.11.2025 4 PM**

Sd/-
Head, BMT Wing