

**Invitation for Expression of Interest (Eol)
for
Transfer of Technology (ToT)**



C-DAC Kolkata has developed a product, namely, “CG-STAT”- a hand-held potentiostat for cyanogenic glycoside detection in bamboo shoots. Brief write-up of “CG-STAT” is given below in this document.

Applications for Expression of Interest (Eol) are invited for the purpose of Transfer of Technology (ToT) / commercialization of the above-mentioned product from the organizations with relevant experience.

1. Interested bidders are requested to provide necessary information in a format mentioned under Annexure-I (Part-A and Part-B) below as part of their Eol bid/application along with all relevant supporting documents.
2. Eol bids need to be submitted in a sealed envelop with marking on top “Eol for ToT of CG-STAT” and it should reach the following address on or before **26/12/2024** by 5:00 P.M.

The Centre Head
Centre for Development of Advanced Computing (C-DAC), Kolkata
Plot - E 2/1, Block - GP, Sector - V, Salt Lake Electronics Complex,
Bidhan Nagar, Kolkata – 700091.

Phone No: 033 2357 3581 / 5989 / 9846

Eol bids shall be opened on **30/12/2024** at **11:30 A.M.**

3. C-DAC Kolkata reserves the right to extend above mentioned bid submission deadline, in which case all rights and obligations of C-DAC Kolkata and the bidders relevant to the previous bid submission deadline shall remain same for the extended deadline.
4. C-DAC Kolkata also reserves the right to amend the Eol bid documents already published which would be binding on all the interested bidders. The amendment will be made available on C-DAC’s website, i.e., www.cdac.in well in advance.
5. During evaluation process of the submitted Eol bids, C-DAC Kolkata may ask the concerned bidder to provide clarifications, if any, on its submitted Eol bid. The request for clarification from C-DAC Kolkata and the response from the bidder/s shall be in writing. No post-submission of Eol bids and/or clarification/s at the initiative of the bidder shall be entertained.
6. Bidders of the received Eol bids may be called for making a presentation before C-DAC Kolkata’s ToT Committee of the product.

7. Representative/s of C-DAC Kolkata may visit bidder's premises, with prior information, to inspect and assess their facilities mentioned in their EoI bids.
8. After evaluation process of the received EoI bids, C-DAC Kolkata will invite submission of sealed **Financial Bids** from the technically selected bidders only.
9. C-DAC Kolkata reserves the right to reject all or any application without assigning any reason thereof.
10. EoI bids that are incomplete in any respect or those that are not consistent with the requirements as specified in this EoI document or those do not adhere to the format given below under Annexure-I (Part-A and Part-B), may be liable for rejection and no further correspondences will be entertained with such bidders.
11. Those who have responded to our previous EoI, if any, need not apply again.
12. Canvassing in any form would summarily disqualify the bidder.
13. All cost and expenses associated with submission of EOI bids shall be borne by the bidders while submitting the EOI; and C-DAC Kolkata shall have no liability, in any manner in this regard, or if it decides to terminate the process of short listing for any reason whatsoever.
14. Contact person on behalf of C-DAC Kolkata for any clarifications on the above mentioned EoI bid document:

Dr. Subhankar Mukherjee

Agri and Environment Electronics (AEE)
Centre for Development of Advanced
Computing (C-DAC), Kolkata
Plot - E 2/1, Block - GP, Sector - V, Salt Lake
Electronics Complex,
Bidhan Nagar, Kolkata – 700091.
Phone No: 033 2357 3581 / 5989 / 9846
Mobile: +91 94773 55692
Email: subhankar.mukherjee@cdac.in

Dr. Souvik Pal

Agri and Environment Electronics (AEE)
Centre for Development of Advanced
Computing (C-DAC), Kolkata
Plot - E 2/1, Block - GP, Sector - V, Salt Lake
Electronics Complex,
Bidhan Nagar, Kolkata – 700091.
Phone No: 033 2357 3581 / 5989 / 9846
Mobile: +91 94051 38189
Email: souvipal@gmail.com

Competent authority
C-DAC Kolkata

Technical Information

1.0 About C-DAC

Centre for Development of Advanced Computing (C-DAC) is the premier R&D organization of the Ministry of Electronics & Information Technology (MeitY), Government of India for carrying out R&D in IT, Electronics and associated areas. Different areas of C-DAC, had originated at different times, many of which came out as a result of identification of opportunities.

C-DAC is working on strengthening national technological capabilities in the context of global developments in the field and responding to change in the market need in selected foundation areas. In that process, C-DAC represents a unique facet working in close junction with MeitY to realize nation's policy and pragmatic interventions and initiatives in Information Technology. As an institution for high-end Research and Development (R&D), C-DAC has been at the forefront of the Information Technology (IT) revolution, constantly building capacities in emerging/enabling technologies and innovating and leveraging its expertise, calibre, skill sets to develop and deploy IT products and solutions for different sectors of the economy, as per the mandate of its parent, the Ministry of Electronics and Information Technology (MeitY), Government of India and other stakeholders including other funding agencies, collaborators, users and the market-place.

C-DAC, Kolkata is one of the 12 Centres of C-DAC in India and situated at most privileged and strategic location at Kolkata, India for pursuing R&D activities in the area of electronics & IT.

C-DAC Kolkata's laboratory infrastructure and manpower have got unique strength of pursuing R&D activities in the fields blended with electronics & sensing system, machine olfaction, advanced instrumentation, software development and soft computing.

2.0 Brief Description of the Product to be transferred

'CG-STAT' is the output of a Ministry of Electronics and Information Technology (MeitY), Govt. of India funded project titled " e-GUNA: Sensory assessment for quality of fermented foods from North-East India". CG-STAT is a high-throughput field portable miniaturized potentiostat with stabilized enzymatic bioreceptor toward cost effective cyanogenic glycoside (CG) detection in fermented food: special reference to bamboo shoot. Cyanogenic glycosides, present in bamboo shoot may lead to acute intoxications in humans, characterized: Growth retardation and neurological symptoms resulting from tissue damage in the central nervous system (CNS). CG-STAT is equipped with stable biosensor-based screen-printed electrode modified with specialized nanoparticles for Differential Pulse Voltametric (DPV) analysis and cyanogenic glycoside quantification in real samples. The device also enables the safety indication of fermented bamboo shoots based on quantification of



CG.

In this device, highly specific enzyme along with suitable nanocomposite has been used as a suitable bio-receptor. It allows the quantitative sensing of cyanogenic glycoside present in the sample. Furthermore, it has point-of use abilities.

Presently the sensing system has been developed and deployed at IBSD-Imphal towards extensive field trial.

Unique Features:

- ⊙ Portable electrochemical biosensing device with mobile/desktop based Graphical User Interface (GUI)
- ⊙ Stabilized enzymatic bioreceptor immobilized Screen-Printed Electrode (SPE)
- ⊙ Rapid prediction of cyanogenic glycoside content in bamboo shoot sample
- ⊙ External power independent device (equipped with 10000 mAh power bank)
- ⊙ Per sample test time: approx. 01 minute (excluding sample processing time of 30 minutes)

Present Day Technological Relevance:

The present invention relates to the technical field of hand-held potentiostat and its application as an electrochemical biosensor device in the fermented food sector for the qualitative presence of chemical toxins in particular and in general to all other food sectors. Chemical toxins such as cyanogenic glycosides are present in traditional fermented foods from bamboo shoots and soybeans. This toxin can cause a multitude of foodborne illnesses. It can lead to cardiovascular aberration and adverse gastrointestinal, seriously impacting human health. The chemical toxins can be analyzed by gold standard instruments, which are sensitive but expensive and non-portable. Field portable rapid device to screen chemical toxins in ethnic fermented food will benefit its consumers worldwide.

The present invention thus provides a field portable device for on-spot screening of toxin chemicals such as cyanogenic glycoside in fermented foods. Moreover, the device can detect the toxin chemicals through an electrochemical reaction with the developed sensor. Also, this invention provides a sensor device that limits the requirement of an expensive “Potentiostat” or “Electrochemical workstation” for the electrochemical detection of toxins. Finally, the low-cost device can be operable in restricted resource conditions, including rural areas and developing countries.

Present Status of the Product:

The instrument has been successfully field tested jointly with IBSD, Imphal during the month of September 2023 & April 2024.

3.0 Scope of the ToT Process

The Transfer of Technology (ToT) would be made on non-exclusive basis and on sole

discretion of C-DAC Kolkata. C-DAC Kolkata's ToT package may contain following:

- ⦿ Technical Documentation of the product
- ⦿ Bill of Materials of the total system
- ⦿ Test plan and procedure
- ⦿ User manual
- ⦿ Signing of ToT Agreement
- ⦿ Provision for imparting training to the technology recipients
- ⦿ Handholding support following ToT

ANNEXURE- I (EoI of CG-STAT for ToT)

The following details should be submitted along with EoI.

(Part-A)

A.	Company Profile	
1.	Name of the Organization: Website:	
2.	Details of Contact Person: Name: Address: Telephone: Fax: E-Mail:	
3.	Year of Incorporation:	
4.	Type of Organization: A. Public Sector/Limited/Private Limited/Partnership/Proprietary/Society/Any other B. Whether Foreign Equity Participation (Please give name of foreign equity participant and percentage thereof) C. Names of Directors of the Board/Proprietors D. Name and address of NRI(s), if any	
5.	Category of the firm: Large/Medium/Small scale unit	
6.	Address of the Registered Office:	
7.	Number of Offices with address (Excluding Registered Office): India	

	Abroad	
8.	Certificate of registration as a manufacturing unit	
9.	Permanent Account Number	
10.	Sales Tax Number/VAT	
11.	Status of ISO9001 Certification	
12.	Annual Turnover for last 3 years:	

Part-B

B.	ESSENTIAL REQUIREMENTS	
1.	The organization must be a reputed firm/Company/SME/Start-up/R&D company incorporated in India with standing of at least 3 years.	
2.	The turnover is to be supported by financial statements of accounts/Annual reports duly certified by a Chartered accountant/Balance sheets of last 3 years/Income tax returns for the last 3 years period.	
3.	Company profile, giving details of current activities and management/personnel structure including evidence of incorporation. The company should be registered and ISO 9001 or equivalent certified.	
4.	Details of absorption of technology for a product/knowhow that has been taken up on production scale in the past may also be given.	
5.	The manpower strength (Technical: Mechanical, Electrical, Electronics, Software & Non-Technical etc.) at various levels to be furnished.	

	<p>Technical:</p> <p>A. B.E./B. TECH/PhD</p> <p>B. DIPLOMA</p> <p>C. SKILLED TECHNICIANS</p> <p>D. UNSKILLED</p> <p>Non-technical:</p>	
6.	The list of machine tools/equipments/software/facilities available related with work to be furnished.	
7.	The in-house technological expertise available to be furnished.	
8.	The list of equipments available for inspection and quality control to be furnished.	
9.	The industry should have adequate space for undertaking this work. Available space - Covered & Open to be furnished.	
10.	List of products/technologies worked with as regular activity in last 3 years. Give the list of products/technologies with general specifications and the customers.	
11.	List of PSUs/Govt. Customers – with contact details (Address, Telephone no., Contact Person).	
12.	The details of sales, marketing and maintenance network to be furnished.	
13.	The list of technical collaborations for various ongoing products may be furnished.	
14.	The bidder shall provide details of the sub-vendors in case they propose to employ for Part-work.	
C.	Expression of Interest: Spell out the extent of interest	
D.	The ToT will be done stage-wise: The preferred stages may be furnished.	

Note:

Data furnished above is by no means a qualification or disqualification. These are meant to facilitate technical comparison of the Eol bids. "NIL" entries against any particular row can also be given and will be considered.

I hereby declare that the above information is true to the best of my knowledge.

Signature with Name & Seal:

Place:

Date: