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Call for Expression of Interest
for participating in the R&D program of Silicon Photonics CoE-CPPICS IIT Madras

The Head (Project Purchase) Date: 31.12.2025

Reference No: EE/8260/258/2025/EOICOECPPICS

Due Date/Time: 20.02.2026@ 3:00 PM

Dear Sir/Madam,

On behalf of "**Silicon Photonics CoE-CPPICS",** Indian Institute of Technology Madras invites **Expression of Interests (EOIs) from eligible industry Partners, start-ups, semiconductor companies, OEMs, system integrators, and design houses under the scope of its R&D program for next 5 years** and **c**onforming to the Scope and Objectives given in this document**.**

The EOI documents may be downloaded from the Central Public Procurement Portal https://etenders.gov.in/eprocure/app. Interested parties who have not enrolled / registered in e-procurement should enroll / register before participating through the website https://etenders.gov.in/eprocure/app. The portal enrolment is free of cost. They are also advised to go through instructions provided at **"Help for Vendors".** [Special Instructions for the e-submission of the EOI proposal online through this eProcurement Portal"

Interested parties can access EOI documents on the website (For searching in the NIC site, kindly go to "Tender Search" option and type 'IIT Madras'. Thereafter, click on "GO" button to view all IIT Madras tenders). Select the appropriate tender and fill them with all relevant information and submit the completed Tender/EOI document online on the website https://etenders.gov.in/eprocure/app as per the schedule attached.

No manual of EOI proposal will be accepted. All EOI documents should be submitted in the E-procurement portal.

Last date for receipt of tender	**:**	**20.02.2026 @ 3:00 PM**
Date & time of opening of tender	**:**	**23.02.2026 @ 3:00 PM**

3. Instructions to the Interested Parties:

A)	**Searching for EOI documents**	**:**	● There are various search options built in the CPP Portal, to facilitate interested parties to search EOI by several parameters. These parameters could include Tender ID, organization name, location, date, value, etc. There is also an option of advanced search for EOI, wherein the interested parties may combine a number of search parameters such as organization name, form of contract, location, date, other keywords etc. to search for a EOI published on the CPP Portal. ● Once the interested parties have selected the EOI they are interested in, they may download the required documents / EOI schedules. These EOI can be moved to the respective **"My Tender"** folder. This would enable the CPP Portal to intimate the bidders through SMS / email in case there is any corrigendum issued to the EOI document. ● The bidder should make a note of the **unique Tender ID** assigned to each EOI, in case they want to obtain any clarification / help from the Helpdesk.
B)	**Assistance to interested parties**	**:**	● Any queries relating to the EOI document and the terms and conditions contained therein should be addressed to the EOI Inviting Authority for an EOI or the relevant contact person indicated in the EOI. ● Any queries relating to the process of online EOI proposal submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk. The contact number for the helpdesk is [0120-4200462, 0120-4001002, 0120-4001005]
C)	**Enrollment Process to Interested Parties**	**:**	**REGISTRATION** ● Interested parties are required to enroll on the e-Procurement module of the Central Public Procurement Portal URL:https://etenders.gov.in/eprocure/app by clicking on "Online Bidder Enrollment". Enrollment on the CPP Portal is free of charge. ● As part of the enrolment process, the interested parties will be required to choose a unique username and assign a password for their accounts. ● Interested parties are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal. ● Upon enrolment, the interested parties will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / TCS / nCode / eMudhra etc.) ● Only one valid DSC should be registered by an interested party. Please note that the interested parties are responsible to ensure that they do not lend their DSCs to others which may lead to misuse. ● Interested parties then may log in to the site through the secured log-in by entering their user ID / password and the password of the DSC / eToken.

			● Possession of a Valid Class II/III Digital Signature Certificate (DSC) in the form of smart card/e-token in the company's name is a prerequisite for registration and participating in the EOI proposal submission activities through https://etenders.gov.in/eprocure/app ● Digital Signature Certificates can be obtained from the authorized certifying agencies, details of which are available in the web site https://etenders.gov.in/eprocure/app under the "Information about DSC".
D)	**Preparation of EOI Proposal**	**:**	● Interested Parties should take into account any corrigendum published on the EOI document before submitting their EOI Proposal. ● Please go through the EOI advertisement and the EOI document carefully to understand the documents required to be submitted as part of the EOI proposal. Please note the number of covers in which the EOI proposal documents have to be submitted, the number of documents including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the EOI proposal. ● Interested parties, in advance, should prepare the EOI proposal documents to be submitted as indicated in the EOI document / schedule and generally shall be in PDF / XLS formats as the case may be. EOI proposal documents may be scanned with 100 dpi with black and white option. ● To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every EOI proposal, a provision of uploading such standard documents (e.g. PAN card copy, GSTIN Details, annual reports, auditor certificates etc.) has been provided to the interested parties. Interested parties can use **"My Documents"** area available to them to upload such documents. These documents may be directly submitted from the **"My Documents"** area while submitting a EOI proposal, and need not be uploaded again and again. This will lead to a reduction in the time required for EOI proposal submission process.
E)	**Submission of EOI Proposal**	**:**	● Interested parties should log into the site well in advance for EOI proposal submission so that he/she can upload the EOI proposal in time i.e. on or before the EOI proposal submission date and time. Interested parties will be responsible for any delay due to other issues. ● The interested parties have to digitally sign and upload the required EOI proposal documents one by one as indicated in the EOI document. ● The server time (which is displayed on the interested parties' dashboard) will be considered as the standard time for referencing the deadlines for submission of the EOI by the interested parties, opening of EOI etc. The interested parties should follow this time during EOI proposal submission. ● The Tender Inviting Authority (TIA) will not be held responsible for any sort of delay or the difficulties faced during the submission of EOI proposal online by the interested parties due to local issues. ● The uploaded EOI documents become readable only after the EOI opening by the authorized EOI openers.

			● Upon the successful and timely submission of the EOI proposal, the portal will give a successful EOI/bid submission message & a EOI/bid summary will be displayed with the EOI/bid no. and the date & time of submission of the EOI proposal with all other relevant details. ● Kindly add scanned PDF of all relevant documents in a single PDF file of compliance sheet. ● More information useful for submitting online bids on the CPP Portal may be obtained at: https://etenders.gov.in/eprocure/app. ● Right is reserved to ignore any EOI which fails to comply with the above instructions. **No manual EOI proposal submission will be entertained.**
1)	The interested party shall certify that the EOI document submitted by him / her are of the same replica of the EOI document as published by IIT Madras and no corrections, additions and alterations made to the same. If any deviation found in the same at any stage and date, the EOI proposal / contract will be rejected / terminated and actions will be initiated as per the terms and conditions of the contract.		
2)	Clarification to the queries and doubts raised by the interested parties will be issued as a corrigendum/addendum in the e-tenders portal.		
3)	In the e-tender process, participation of interested parties after the due date is not possible. The eligible interested parties can login to the e-Procurement portal to ascertain the EOI status.		

EOI Ref No. EE/8260/258/2025/EOICOECPPICS

Subject: Expression of Interests (EOIs) from eligible industry Partners, start-ups, semiconductor companies, OEMs, system integrators, and design houses under the scope of CPPICS R&D program for next 5 years (see Annexure A)

ACKNOWLEDGEMENT

It is hereby acknowledged that I/We have gone through all the points listed under the "EOI document, Guidelines, Terms and Conditions". I/We totally understand the terms and conditions and agree to abide by the same.

SIGNATURE OF TENDERER ALONG WITH SEAL OF THE COMPANY WITH DATE

ANNEXURE - A

Technical Details for the Expression of Interests (EOIs)

Background:

The Centre for Programmable Photonic Integrated Circuits and Systems (CPPICS) at the Department of Electrical Engineering, IIT Madras, is a Silicon Photonics Centre of Excellence (CoE) supported by MeitY. The Centre aims to build India's foundational capabilities in **programmable photonic processors, co-packaged optics (CPO), wafer-scale test and reliability infrastructure, and advanced photonic–electronic co-design methodologies**.

Over the past five years, CPPICS has built a strong IP portfolio for chip-scale microwave photonic process engines, QKD Transceiver, Gaussian Bosson Sampling processor, besides successful ToT on full-stack, field-deployable Quantum Random Number Generator (QRNG) module for security applications.

The Centre is equipped with state-of-the-art 200-mm wafer-scale and die-level characterization facilities, and is now on the cusp of completing its 200-mm Silicon Photonics PDK with associated IP blocks, laying the foundation for scalable photonic manufacturing and advanced system integration. Team CPPICS has been also engaged in developing electronic photonic design automation (EPDA) tools and currently in an advanced stage for its commercialization.

Over the next five-year programme, CPPICS seeks to accelerate industry-driven innovation in silicon photonics by co-developing design libraries, 200-mm and 300-mm foundry-grade PDKs, advanced packaging workflows, and chip-scale prototype engines targeting high-growth markets in AI, datacom, telecom, quantum technologies, and strategic electronics. This effort will be supported by the establishment of a state-of-the-art 300-mm wafer-scale test facility, enabling comprehensive characterization, validation, and system-level benchmarking for next-generation photonic integrated circuits.

Objective of the EOI:

Primary Objectives

CPPICS seeks Expressions of Interest from industry partners across the semiconductor, photonics, telecom, quantum, and AI hardware sectors to collaborate in its next five-year R&D program.

- Co-develop a mature Silicon Photonics PDK for 200-mm and 300-mm foundry platforms, along with associated design libraries and EPDA toolchains.
- Collaborate on large-volume photonic packaging, including advanced Co-Packaged Optics (CPO) and heterogeneous integration workflows.
- Strengthen India's PIC value chain through wafer-scale testing, prototype development, reliability qualification, and benchmarking for commercialization.

Expected Outcomes

Partner in the development of five next-generation chip-scale prototype engines (TRL 5–8):

- Photonics Engine for high-performance computing and communications
- Micro/mm-wave Photonics Engine for 5G/6G and strategic systems
- QRNG + Integrated QKD Engine for secure communications
- Quantum Photonic Processor for computing and simulation
- High-Speed AI Photonic Processor for next-gen data centers

Scope of Collaboration:

- Co-development of Co-Packaged Optics (CPO) architectures, optical I/O engines, and advanced photonic–electronic co-integration workflows.
- Participation in building EPDA toolchains, design kits, simulation libraries, and co-design methodologies for PIC–electronics integration.
- Joint validation of prototype modules, packaging flows, and system-level performance in the Application domain of Microwave/Quantum/AI.
- Contribution to specification setting, application requirements, reliability testing and benchmarking against industry standards for commercial deployment.

Benefits to Industry Collaborators:

Industry partners joining CPPICS Phase-II will gain access to a rapidly advancing national silicon photonics ecosystem with several strategic benefits (Subject to Research Collaboration Agreement):

- **Early Access to Foundry-Ready PDKs**: Partners will benefit from CPPICS's near-complete 200-mm Silicon Photonics PDK and contribute to the development and early adoption of the upcoming 300-mm PDK, enabling faster product design cycles and reduced development risk.
- **State-of-the-Art Test Infrastructure:** Partners will receive privileged access to state-of-the-art photonic testing and characterization facilities, advanced 200-mm and 300-mm wafer-scale test facilities, high-speed optical/electrical measurements, and advanced reliability evaluation tools.
- **Technical Collaboration and Expert Support**: Partners can directly engage with faculty, researchers, and PICs design engineers at IIT Madras, gaining access to consultancy, design guidance, technology reviews, and co-development opportunities.

Governance & Review Mechanism:
Steering Committee, quarterly reviews, annual roadmap assessment, joint IP/tech transfer committee.

All intellectual property, confidentiality, and commercial terms shall be governed by the Research Collaboration Agreement (RCA) to be executed between IIT Madras and the selected industry partners

ANNEXURE - B

TECHNICAL EOI PROFORMA

EOI No. EE/8260/258/2025/EOICOECPPICS

Subject: Expression of Interests (EOIs) from eligible industry Partners, start-ups, semiconductor companies, OEMs, system integrators, and design houses under the scope of CPPICS R&D program for next 5 years (see Annexure A)

1.0 **Bidder Eligibility Criteria:**

II	**Bidder Eligibility Criteria**	**Complied/Not Complied**	**Ref Page No.**
1	**Ability to Take Product to Market:** Demonstrated capability to transition R&D outcomes into commercial products, including manufacturing readiness, market access, regulatory compliance, and go-to-market execution		
2	**Sector Expertise & Experience:** Proven technical and business experience in relevant sectors such as semiconductor, photonics, telecom, quantum, and AI hardware sectors		
3	**Alignment with CPPICS Roadmap:** Strategic alignment with CPPICS's technology roadmap, including PDK development, advanced packaging, co-packaged optics, system-level integration, and targeted application areas.		
4	**Financial Investment & Engagement Plan:** Commitment to financial or in-kind investment, along with a clear plan for sustained engagement through co-development, resource sharing, and long-term collaboration.		

Note:

(i) EOIs will be evaluated based on the above criteria using a qualitative assessment framework approved by the evaluation committee.

(ii) Countries sharing Land border sharing with India need to take approval from the ministry.

Annexure-C

EOI No. EE/8260/258/2025/EOICOECPPICS

Subject: Expression of Interests (EOIs) from eligible industry Partners, start-ups, semiconductor companies, OEMs, system integrators, and design houses under the scope of CPPICS R&D program for next 5 years (see Annexure A)

S. No	Terms and Conditions	Complied/Not Complied	Ref. Page No.
1	It is requested that the Prospective Interested Party be professional in analyzing stages described in **Annexure-A** and bring out shortcomings and any additional details that may be missed.		
2	The Interested Party is also requested to provide exhaustive details for following by providing data sheets, marketing literature, technical publications, user manuals, white papers and photographs of the components already developed and status of those which are under development. The partner is also requested to provide information that is necessary even when it is not specifically asked for.		
3	Interested Party should provide detailed documents covering the experience, infrastructure, resources, technologies being adopted/ proposed and any other relevant details for each topic listed below. Experience in Silicon Photonics technology ● Patents ● Publications Successful projects and references if possible		
4	Documents to be submitted with EoI. The company must provide details about the company and documents in support of their claim as per Annexure - B. Any additional documents as required by IITM shall be sought based on request received from the interested industries.		
5	The Interested Party should also have skilled manpower, established quality management system, willingness and capability to setup specialized infrastructure, experience in handling large supply chain		
6	Annual budget (if any) for R&D during last three years.		
7	Number of technically or professionally qualified personnel		
8	Record of past performance (e.g., Supply orders executed against of Ministry of Defence orders, Public Sectors and Paramilitary Forces, if any).		

9	Availability of adequate infrastructure (List of machines and their production capacities) and technical expertise to assemble, integrate and test.		
10	List of Testing and Support equipments		
11	ISO/ ISI certification or any other certification (if any).		
12	Relevant clearances form the authorities/ ministries (if any).		
13	Capacity and capability to undertake developmental work and to accept attendant financial and commercial risks		
14	Capacity/capability to market the product through the marketing network, sales and service network, reliability to maintain confidentiality.		
15	Brief description of R&D facilities and certificates recognised by any Govt agencies		
16	Certificates of registration as a manufacturing unit, if any.		
17	Audited Balance Sheet, turnover and net worth of the company for the preceding three years.		
18	Income Tax returns for the preceding three year period		
19	Details of shareholding/ownership pattern especially foreign partners/ shareholders, foreign employees, directors, etc. The company must adhere to the prevailing Govt of India policies and regulations on Foreign Direct Investment (FDI)/DIPP norms as applicable		

Note:

(i) It is mandatory for the Interested Party to provide the compliance statement (Complied/Not Complied) for the above points with document proof as required). If the compliance statement (Complied/Not Complied) is not furnished for the evaluation, the Interested Party will be disqualified.

(ii) Consortium in any form will not be permitted (group of companies)

SIGNATURE ALONG WITH
SEAL OF THE COMPANY WITH DATE

Profile Template for the Submission of EOI
(Limited to 10 pages)

1. Company Name and Brief Profile:
2. Contact Details (Name, Postal Address, Email and Phone No.):
3. Proposed Statement of Work (SoW):
4. Financial Investment and Engagement Plan:

Interested parties may consider submitting a technical bid soft copy of their EoIs in above format along with a cover letter through the E-procurement portal. Submitted EoIs will be evaluated and the prospective industry collaborators will be engaged in signing NDA and the Research Collaboration Agreement (RCA) with IIT Madras

Note: Submission of an EoI does not create any obligation on IIT Madras to enter into a collaboration or award any contract.