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**Photonic Consortium Publishes Semi-Annual Report**

***Next workshop set for December 7 & 8***

Herndon, Virginia, and Cambridge, Massachusetts (USA) — September 8, 2015 — The Photonic Systems Manufacturing Consortium (PSMC) has published a semiannual report tracking its program’s milestones and technical progress, and outlining challenges and opportunities. The report is [now available on the PSMC website](http://photonicsmanufacturing.org/node/104/).

Since its creation in 2014, PSMC has concentrated on bringing together the fragmented, customization-focused photonics industry and academic-based and other research technologists, to collaboratively develop a common roadmap for low-cost, high-volume manufacturing of photonic systems for data and telecommunication systems.

To date, four [Technology Working Groups](http://photonicsmanufacturing.org/node/39/#twg) (Assembly & Test; Packaging of Electronic Photonic Systems; Interconnect; and Monolithic Integration) and two [Product Emulator Groups](http://photonicsmanufacturing.org/node/39/#peg)(Internet of Things and Data Center) have been developing a roadmap for integrated photonics using data and assessments developed in individual TWG and PEG meetings, bi-weekly leadership video conferences, and input from two workshops.

Building the Integrated Photonics Community

“We believe that coalescing the integrated photonics community to develop a shared vision of the future is of equal importance to the technology plan that PSMC will ultimately deliver,” said Robert (Bob) Pfahl, one of the two Principal Investigators for PSMC. “The success of PSMC and the U.S. government’s recently announced [Integrated Photonics Manufacturing Innovation Institute’s](http://manufacturing.gov/ip-imi.html) (IP-MII’s) [AIM Photonics](https://www.dodmantech.com/Institutes/AIM-Photonics)\* depend on the degree to which the microphotonics stakeholders can develop a shared vision and work together in a public-private partnership to develop the tools, materials and processes required to manufacture silicon photonics in high volume and at low cost. Achieving this shared vision is a greater challenge than producing a roadmap and a technical plan for implementation.”

Lionel Kimerling of MIT’s Microphotonics Center and the other PSMC Principal Investigator agrees. “We were greatly encouraged at our spring workshop to see that a core group of stakeholders now recognize the need for mutual cooperation in the industry,

*(more)*

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agree on certain technology choices, and also agree on the need for technical training in the new technology, particularly for the designers. These components are critical in achieving the ultimate goal of producing high-volume, low-cost photonic devices.”

In particular, Kimerling says the spring workshop highlighted three key issues related to reducing cost and supporting the AIM Photonics manufacturing ecosystem:

* Although many optical communication products are built today utilizing multi-mode technology, the future for optical communications is single mode, which offers greater bandwidth, reach and data density. Assembly technology development must address methods suitable for single mode photonic transmission.
* The assembly technologies used in electronics are the starting point for photonic assembly, and it is imperative that higher accuracy, thinner bond line processes — including attachment materials, placement tools and control of part dimensions —be developed for single-mode optical assembly if low-cost photonics are to be achieved.
* Although integrated photonics manufacturing can adopt tools and platforms from the integrated circuit industry, it must develop a compatible design, test and packaging infrastructure with capabilities that are unique to photonics. A major effort during PSMC’s next semi-annual period will be developing and expanding this shared vision for PSMC and AIM Photonics Institute.

Fall Meeting Scheduled

The PSMC Stakeholder Review and Fall Meeting is scheduled for December 7-8 in Cambridge, Massachusetts. By that time, the roadmap will be nearing completion. This meeting will provide a preview of the final publication and a last chance for review and input. Watch the [PSMC website](http://photonicsmanufacturing.org/) for details.

About PSMC

PSMC is a collaborative program organized by the [International Electronics Manufacturing Initiative](http://www.inemi.org/) (iNEMI) and the [MIT Microphotonics Center](https://mphotonics.mit.edu/) (MIT-MphC), and funded by the NIST [Advanced Manufacturing Technology Consortia (AMTech) Program](http://www.nist.gov/amo/index.cfm). Its goal is to address the technology gaps and challenges that are limiting the advancement of hardware technology for integrated photonic system manufacturing. For additional information, go to <http://photonicsmanufacturing.org>

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