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Start of Photonics Assembly Consortium: PODIUM

A unique ecosystem to accelerate and standardize the packaging of integrated photonics

Today Chip Integration Technology Center (CITC), Tegema, PI (Physik Instrumente) and PHIX released their new Photonics Assembly Consortium called PODIUM, funded by PhotonDelta and CITC. The name PODIUM refers to PIC Open Development Infrastructure for Universal Markets. The consortium runs a program in which optical termination technology, assembly and packaging is developed for a wide range of integrated photonic applications. As a Key Enabling Technology, photonics is the driver in many relevant innovations, for example data communication - saving lots of energy - and medical technology - saving lives.

CITC utilizes the modular machine platform that Tegema has developed which allows integration of a wide range of motion, process and handling modules. The platform uses state of the art motion hardware and firmware of PI, which enables ultra-high motion precision and active optical alignment routines. Barry Peet, General Manager of CITC, about the added value of the consortium: *“PODIUM will help customers to optimize their packaging solution before bringing it to volume production, either by transferring the outcome to PHIX, offering optical assembly services, or back to the customer for in-house production using the Tegema platform. The role of CITC, as joint innovation center, is ideal to combine the expertise and capabilities of the 3 partners involved to create maximum added value for the end-customer.”*

PhotonDelta, as a growth accelerator for the Dutch integrated photonics industry, supports and funds this consortium. The funding is made possible by the Province of Gelderland and Brainport Development, as stakeholders of PhotonDelta. Ewit Roos, CEO of PhotonDelta adds *“The development of production equipment that is tuned to the needs of integrated photonics manufacturers is essential to enhance the growth of the Dutch photonics industry. It will enable players to efficiently and reliably produce the devices and systems that the market is asking for. Right now, packaging costs of photonic integrated chips are relatively high compared to the total costs of the module. At PhotonDelta, we strive for the mass-adoption of this technology, for which we need to bring these costs down and make the technology more accessible. We believe that the initiative from CITC, Tegema, PI and PHIX will get us closer to that goal.”*

Photonics is the driver in many relevant innovations and a breakthrough is hampered by high assembly costs: up to 80% of the total device costs are in electrical and optical packaging. Especially the optical packaging requires a tedious and time-consuming active alignment of all optical components. “Active” in this context means that the device has to be switched on while the performance is optimized during alignment.

CITC combines electrical and optical package know-how to create a compelling innovation in the field of photonics packaging to support, develop and evaluate equipment, processes, standardization and new technologies.



About CITC

Chip Integration Technology Center (CITC) is a non-profit joint innovation center that specializes in heterogeneous integration and advanced packaging technology. It is a place where companies, research and educational institutes work together on bridging the gap from academics to industry and create new and better solutions. We offer access to innovation, infrastructure and education.

www.citc.org

About PHIX

PHIX provides assembly and packaging services for photonic integrated circuits (PICs), supporting all major technology platforms, like InP, Si and SiN. We are specialized in hybrid integration of chip-to-chip and fiber-to-chip modules. We provide both prototype and high-volume assembly and offer contract manufacturing for individual process steps. We offer a state-of-the-art infrastructure in The Netherlands, supporting the European and worldwide industrial development of PICs.

www.phix.com

About PhotonDelta

PhotonDelta is a growth accelerator for the Dutch integrated photonics industry. Its objective is to promote the adoption of integrated photonics and support companies to get prioritized access to the Dutch Integrated Photonics supply chain. Furthermore, PhotonDelta runs a new business creation program that provides companies, ranging from startups to SMEs and big organizations, with access to strategy, market, and funds.

www.photondelta.com

About PI

PI (Physik Instrumente), headquartered in Karlsruhe, is the market and technology leader for high-precision positioning technology and piezo applications in the semiconductor industry, life sciences, photonics, and in industrial automation. In close cooperation with customers from all over the world and for 50 years now, PI's specialists (approx. 1,300) have been pushing, again and again, the boundaries of what is technically possible and developing customized solutions from scratch. More than 350 granted and pending patents underline the company's claim to its leadership. PI has six production sites and 15 sales and service offices in Europe, North America, and Asia.

www.physikinstrumente.com/en

About Tegema

TEGEMA is a multidisciplinary system integrator with over 100 passionate engineers and business consultants. Founded in 1976, we have over 40 years of experience in the field of customized precision mechanics and mechatronics and combine this experience with the latest robotics, software and big data technologies to optimize production performance in the high tech industry.

www.tegema.nl

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For further information

CITC	Marco Koelink	Business Development Manager	+31 (0)6 15 15 66 41	marco.koelink@citc.org
PHIX	Gijs van Ouwkerk	Marketing and Communication	+31 (0)53 48 36 850	g.vanouwerkerk@phix.com
PhotonDelta	Jorn Smeets	Marketing & Communications Manager	+31 (0)6 11 47 88 12	jorn@photondelta.com
PI Benelux	Erik Reichardt	Sales Manager	+31 (0)6 12 06 40 87	e.reichardt@pi.ws
Tegema	Nathalie van Zeijl	Business Development Manager	+31 (0)6 14 72 41 27	nathalie.vanzeijl@etteplan.com