SUMITOMO PRECISION PRODUCTS CO., LTD.

News Release

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Sumitomo Precision Products Co., Ltd.

AMFitzgerald and MEMS Infinity Form Alliance to Accelerate Commercialization of Piezoelectric MEMS Products

--Integrated design-to-production services speed development of piezoelectric sensor or actuator chips for performance-driven products

AMAGASAKI, HYOGO, Japan and BURLINGAME, Calif., USA — January 17, 2024 — A.M. Fitzgerald & Associates, LLC (AMFitzgerald), a microelectromechanical systems (MEMS) product development company, and Sumitomo Precision Products Co., Ltd. (SPP)'s MEMS Infinity — which offers a full-service MEMS silicon wafer foundry —today announced a strategic and technical alliance to expedite the commercialization of thin-film PZT MEMS chip technologies. PZT is a versatile piezoelectric material that is sought after for MEMS sensors or actuators serving high-growth applications such as True Wireless Stereo, automotive LiDAR, medical ultrasound imaging, AR/VR, haptics and other applications that require precise performance in a robust, ultra-miniaturized form factor.

"As a material that enables many types of emerging, performance-intensive MEMS devices, thin-film PZT is much in demand," said Dr. Alissa M. Fitzgerald, founder and CEO of AMFitzgerald. "PZT, however, requires specific process tools and expertise that are not widespread. For companies trying to develop PZT MEMS technologies, it's been especially difficult to access commercial-quality material during development stages, while wafer volumes are low. That's a problem because using poorly controlled research-grade materials during prototyping really slows down product development.

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But that's about to change. Our new alliance with MEMS Infinity will give our customers an integrated design-to-manufacture solution using high-quality PZT from day one."

The AMFitzgerald-MEMS Infinity alliance meets a critical need in the MEMS industry ecosystem:

- Pairs AMFitzgerald's expertise in MEMS development with MEMS Infinity's aerospace-grade prototyping and manufacturing capability in PZT MEMS.
- Offers a seamless design-to-production experience for customers.
- Facilitates global access to MEMS Infinity's thin-film PZT.
- Leverages proprietary data on thin-film PZT to improve accuracy of MEMS design and modeling, minimizing the need for design-build-test cycles and accelerating product development.
- Provides customers with foundry-specific MEMS design — which lowers barriers to access, decreases risk, shrinks overall development cost, and speeds the path to commercialization.

"For decades, SPP has used production-proven processes of its high-quality PZT to produce MEMS inertial sensors for the most demanding applications," said Mr. Masahiko Tanaka, managing executive officer, Sumitomo Precision Products. "To respond to increasing worldwide needs, our foundry expansion through MEMS Infinity broadens our manufacturing capability in PZT MEMS. Together with AMFitzgerald — our choice collaborator for PZT MEMS design and product development — we can deliver an exceptional solution for customer needs in growing markets."

About PZT MEMS

Piezoelectric materials transduce electrical energy to mechanical energy and vice-versa, a property that makes them useful as sensors or actuators. PZT is a piezoelectric material that delivers an optimal combination of performance, efficiency, environmental robustness and high reliability. These attributes enable PZT MEMS to pack maximum functionality into a small volume for performance-intensive applications, such as ultrasound transceivers, micro-speakers, micro-mirrors, RF switches and microfluidics,

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as well as emerging technology devices. For more information, visit

https://www.amfitzgerald.com/pztmems

Availability

AMFitzgerald and SPP are available now to discuss design, development and fabrication of PZT MEMS devices. Contact us to discuss your needs: pztmems@amfitzgerald.com

About AMFitzgerald

Founded in 2003, AMFitzgerald provides MEMS chip design and product development services for high-value aerospace, industrial, and medical markets. Using its proven design-for-manufacturing methodology that brings emerging silicon technologies from concept to volume production, AMFitzgerald has successfully helped hundreds of clients, including numerous Fortune 100 companies, to develop strategic microelectronic technologies for commercial applications. AMFitzgerald describes its technology development methods in the book, MEMS Product Development: From Concept to Commercialization (Springer, 2021). For more information, visit https://amfitzgerald.com or email: info@amfitzgerald.com.

About Sumitomo Precision Products

Founded in 1961, Sumitomo Precision Products Co., Ltd. (SPP) is a leading provider of precision technologies and manufacturing services. Its core business capabilities include a full line of MEMS-related offerings: manufacturing equipment, process development, foundry production, test and manufacturing. Guided by a core set of principles that value integrity in all business practices, SPP seeks to advance a more sustainable society through technology innovation. For more information, visit https://www.spp.co.jp/English/

MEMS Infinity, newly launched at SPP, advances the development and mass production of MEMS sensors and actuators for diverse industries. Featuring a 20,000 square-foot cleanroom housing 150mm and 200mm wafer fabrication lines — which include PZT-specific patterning equipment and proprietary high-figure-of-merit epitaxial-PZT (epi-PZT) thin film deposition — MEMS Infinity is located in the industrial and technology hub of Amagasaki, near Osaka, Japan. For more information, see “Sumitomo Precision Products Launches MEMS Foundry Services through MEMS Infinity” (press release, January 17, 2024), visit https://www.spp.co.jp/mems/ict/en/index2.html or email: mems-infinity@spp.co.jp

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