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November 15, 2021

Roswell Biotechnologies Unveils First Molecular Electronics Chip to Digitize Biology

Company kicks off early development partnership program for the Roswell Molecular Electronics Platform in drug discovery, molecular diagnostics, and sequencing

SAN DIEGO, Nov. 15, 2021 /PRNewswire/ -- Roswell Biotechnologies, Inc., the molecular electronics company, announced today the introduction of the first molecular electronics chip and the Roswell Molecular Electronics (ME) Platform for biosensing applications. The company unveiled the technology along with an early development partnership program at its inaugural Molecular Electronics Day in San Diego, which also marked the 50th anniversary of the launch of the first microprocessor chip, the Intel 4004. A peer-review paper, authored by Roswell scientists, and professors **George Church, PhD**, of Harvard and MIT and **James Tour, PhD**, of Rice University, is under review at *The Proceedings of the National Academy of Sciences*.

"The Roswell ME Chip realizes a 50-year vision of putting molecules into chips, and I would like to thank our entire team and the scientific pioneers in molecular electronics who made this possible," said Paul Mola, Roswell Biotechnologies' founder, CEO and president. "As a universal, programmable biosensor, the Roswell ME Platform opens a new era of digitizing biology, just as the first microprocessor opened the era of digitizing information."

The Roswell ME Platform integrates single molecules into electronic circuits acting as sensor elements to create the first fully scaled biosensors on standard semiconductor chips. The sensor translates the dynamic process of molecular interactions into electrical measurements in real-time. The sensor targets are programmed according to the particular molecule wired into the chip, providing for a programmable and universal biosensor platform. This new kind of single-molecule measurement with resolution for individual binding events enables an unprecedented and information-rich view of biology to transform major markets. On-chip results in a powerful biosensor with ultimate scalability for a broad range of applications deployed on smart, compact devices.

The Roswell ME Platform is being developed for applications in drug discovery, molecular diagnostics, and sequencing. A series of whitepapers on the platform and applications may be accessed here.

"Innovation in drug discovery is fueled by new views of how molecules interact, and new ways to increase the scale of molecular screening," said Dhaval Patel, PhD, executive vice president and chief scientific officer of UCB, a global pharmaceutical company. "The Roswell ME Platform has the unique potential to address both these areas with its new molecular biosensor chip. This represents the type of deep technological advance that could accelerate the discovery of new medicines."

"The bold goal of curing all disease this century will require both fundamental advances in understanding biology and new technologies to support personal health and wellness," said Sandra Schmid, PhD, Chan Zuckerberg Biohub chief scientific officer, and Roswell Scientific Advisory Board member. "The Roswell ME Platform offers new power to address our understanding of molecular interactions as well as ways to make this information widely accessible."

In 2019, Roswell formed a partnership with IMEC, a world-leading research and innovation hub in nanoelectronics and digital technologies, enabling the company to develop foundry-compatible manufacturing processes for the innovative Roswell ME Chip. To support the transition to commercialization, Roswell has recently expanded facilities, engaged with an elite Scientific Advisory Board, and ramped-up hiring, including adding to its strong leadership team.

About Roswell Biotechnologies

Roswell Biotechnologies is digitizing biology with molecular electronics to predict, prevent, and cure disease. The company has developed the world's first molecular electronics chip, the Roswell ME Chip™, which integrates single-molecules into standard semiconductor chip technology to deliver a programmable biosensor that converges a broad range of biosensing applications and omics measurements onto one platform. The Roswell ME Chip Platform is being commercialized for applications in drug research and discovery, molecular diagnostics, sequencing and DNA digital data storage, Roswell Biotechnologies was founded in 2014 by industry leaders in genomic technologies and is headquartered in San Diego, California.

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