November 18, 2024

Quemix Inc.

Quemix Enters into a Capital and Business Alliance with SCSK

～Expanding Materials Informatics Business and
Accelerating R&D toward the societal implementation of Quantum Computing ～

Quemix Inc. (President and CEO: Yuichiro Matsushita; Head office: Nihonbashi, Chuo-ku, Tokyo; "Quemix") a member of the TerraSky Group, and a leader in the research and development of algorithms and software for quantum computing , announced today that has entered into a capital and business alliance with SCSK Corporation (Representative Director, President: Takaaki Toma; Head office: Koto-ku, Tokyo; "SCSK") on November 15, 2024. This alliance aims to accelerate R&D for the societal integration of quantum computing as well as expand operations in the materials computation market.

【Alliance Background】

With the widespread adoption and advancement of new technologies such as AI, autonomous vehicles, and electric vehicles, the demand for high-performance semiconductors, electronic components, batteries, and other advanced materials has increased more than ever before. To shorten development timelines and reduce costs for these high-performance materials, the integration of Materials Informatics (MI) - which uses computational chemistry and computer simulations in the development process – is becoming increasingly essential.

Quantum computers, the next-generation high-performance computing technology, are expected to bring breakthroughs not only in "optimization problems" and "encryption", but also in "materials computation and simulation.". Since the end of 2023, several hardware vendors have announced that the release of the "Fault-Tolerant Quantum Computer (FTQC)", a practical version of the quantum computer, is anticipated sooner than expected, accelerating global research and development toward their realization.

Quemix, led by CEO Yuichiro Matsushita, is home to leading experts in materials computation research and development. The company develops and offers unique materials computations software, including the cloud-based platform "Quloud" and "Quloud-Mag", which enables simulations of magnetic materials based on first-principles calculations without the need for experimental data.

Furthermore, in the field of quantum technology, Quemix has focused on developing algorithms for Fault-Tolerant Quantum Computers (FTQC) since its establishment. The company has patented the "Probabilistic Imaginary-Time Evolution (PITE®) algorithm, which has been mathematically proven to achieve quantum acceleration for quantum chemistry calculations. As a leader in this field, Quemix is advancing research and development toward the practical application of quantum computing in materials computation and simulation, with a target of achieving this by 2028.

SCSK works with customers and partners in a wide range of industries to solve social issues. Among the commercial products handled by the SCSK Group, the Citrine Platform provides support services for rapid material development for customers in a wide range of material fields.

With the goal of accelerating the practical use of quantum computing and providing more innovative and efficient solutions in the fields of materials development, both companies aim to contribute to Japan's economic growth and the resolution of societal challenges. To this end, SCSK has participated as an investor in Quemix's capital increase round, leading to the formation of a capital and business alliance.

【Future Outlook】

Through this capital and business alliance, Quemix and SCSK will combine their accumulated knowledge, experience, and solutions to jointly drive contributions to the fields of materials computation and quantum computing technology. As the collaboration begins, both companies will leverage their respective strengths in the materials computation market to provide simulations ranging from the nanoscale to the macroscale, meeting a broad range of customer needs.

With the impending practical application of quantum computing, Quemix will leverage SCSK's insights into diverse customer needs to further advance research and development of FTQC-oriented algorithms and pursue intellectual property acquisition activities. Additionally, Quemix will support the adaptation of SCSK Group's services, software, and applications to quantum computing, enhancing functionalities that were challenging to achieve with conventional technology, as we work together toward breakthrough advancements.

About Quemix Inc.

Quemix Inc., a consolidated subsidiary of TerraSky Co., Ltd. (Headquarters: Chuo-ku Tokyo, CEO: Hideya Sato), conducts research and development in quantum computing algorithms and software, quantum sensors, and materials computation. With a vision to "Realize the future envisioned through Quantum Technology", Quemix's mission is to support groundbreaking advancements by companies leading the era with quantum technology. Their mission is to achieve breakthroughs in leading companies with their technology.

About SCSK Corporation

SCSK Corporation offers a full lineup of IT services for all business needs, from consulting, system development, verification services, IT infrastructure construction, IT management, IT hardware and software sales, and business process outsourcing (BPO). They are also engaged in new challenges to solve issues in various fields through co-creation with customers and society based on their IT business.

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