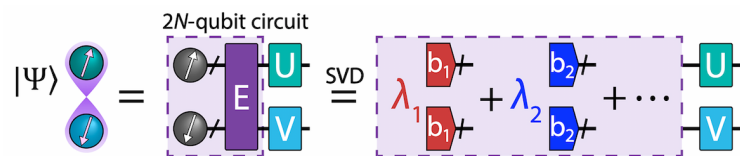


NTU Q

SCIENTISTS DOUBLE THE SIZE OF QUANTUM SIMULATIONS WITH ENTANGLEMENT FORGING

IBM team demonstrated “entanglement forging” to create a remarkably accurate simulation of the ground state energy of a water molecule, successfully representing 10 spin-orbitals on just five qubits of IBM’s 27-qubit Falcon quantum processor.

Entanglement forging dividing quantum systems into two weakly entangled halves, calculate those halves separately on a quantum computer, and then using classical computer to calculate the entanglement between them. Therefore, the entanglement forging technique can take a circuit operating on $2N$ qubits, and separates that circuit into two N -qubit halves.



(Source: IBM)

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IONQ AND HYUNDAI MOTOR PARTNER TO USE QUANTUM COMPUTING TO ADVANCE EFFECTIVENESS OF NEXT-GEN BATTERIES

IonQ and Hyundai Motor Company announced a partnership to develop new variational quantum eigensolver (VQE) algorithms to study lithium compounds and their chemical reactions involved in battery chemistry. This collaboration is a crucial component of Hyundai’s [Strategy 2025 goals](#), which include the sale of 560,000 electric vehicles per year and the introduction of more than 12 battery electric vehicle models to consumers.

Their researches have the potential to lead to new types of source material that save time, cost and effort in the years to come — a critical advancement as batteries are typically the most expensive component of an electric vehicle.

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APPLICATIONS ARE OPEN: QUANTUM ERROR CORRECTION SUMMER SCHOOL 2022

The 2022 IBM Quantum Error Correction Summer School applications are now open. It will be a month-long, in-person event that will take place in July at the Tarrytown House Estate in Tarrytown, New York. On March 3, 2022 the first round of applications will be selected. Applications will still be accepted after March 3 but will only be considered if space is available.

The aim of the QEC Summer School is to give participants a working knowledge of QEC, as well as some of the latest results in selected areas. Therefore, this school will provide a series of mini-courses:

- Three foundation theory courses
- Two latest theoretical advances courses
- Three current experimental QEC courses
- Two courses on QEC programming

The Quantum Error Correction Summer school has a maximum capacity of 70 participants. Potential participants must meet this set of eligibility requirements:

- Participants must be 18 years or older.
- Participants must be proficient in certain academic fields as outlined in the requirements section of the QEC Summer School [website](#).
- Participants must be citizens or nationals of countries that are eligible to participate pursuant to applicable export controls laws.
- Participants must be fully vaccinated and up-to-date with boosters against COVID-19, and comply with all U.S. laws and regulations for individuals entering the United States.
- Lectures will be in English so participants must be proficient in English.

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