

# Quantum technology innovation for Society 5.0

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## Abstract

We are facing major global challenges such as global warming and pandemic. Both are caused by human behavior, and cross-border cooperation is essential. Appropriate use of data in cyberspace to encourage behavioral change is the key to solutions.

With recent DX, the integration of the real world and cyberspace is accelerating. Digital technologies connect people in remote places, and reduce disparities across age, ability, gender, race, or location. In Japan, all sectors including the government, industry and academia are working together to realize this ideal future, which we call Society 5.0. In order to realize Society 5.0, it is crucial to secure trust in the cyberspace.

Nature is driven by physical, chemical, and biological mechanisms, but humanity has not yet fully unveiled and utilized them. Emerging quantum technology is one of them, and the unused principles of quantum mechanics are about to be utilized. We should continue basic research to expand our wisdom. Fostering next generation is further important. Under this situation, I believe the role of the academia that have diverse knowledge is becoming more and more important. The daily collaboration among top scientists transcending countries is indispensable.

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