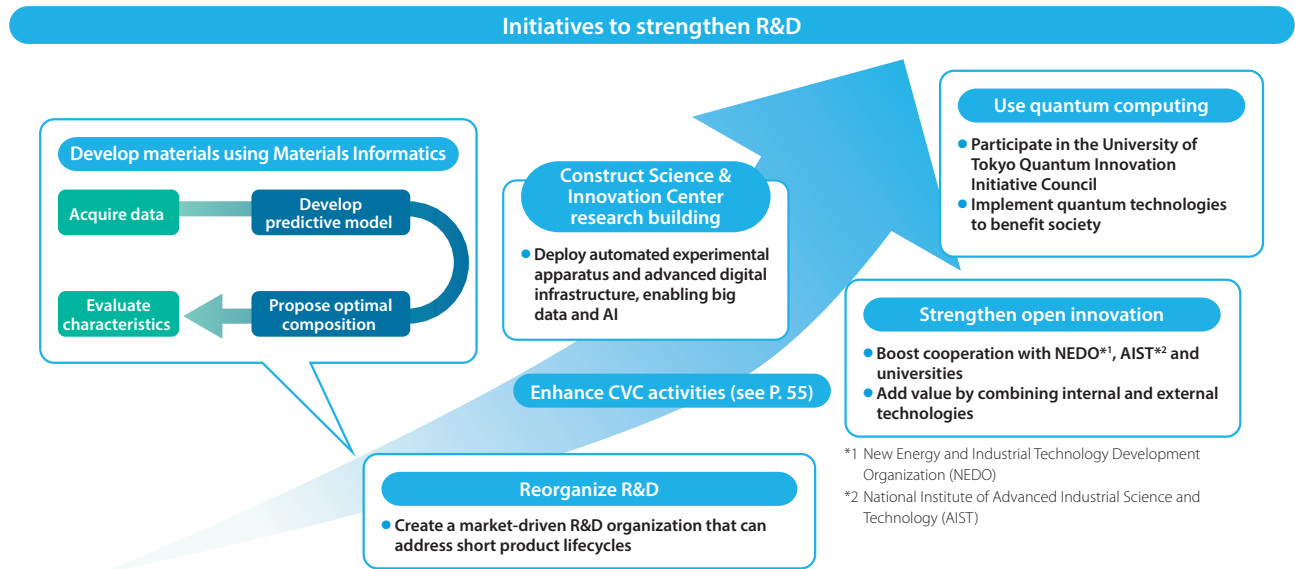


Advancing R&D and Developing Next-Generation Businesses

R&D lies at the very heart of innovation, and we are improving R&D efficiency by applying materials informatics and expanding open innovation. Advancing innovation in this way will accelerate the creation of next-generation businesses.

Streamlining R&D with digital technology and open innovation



R&D initiatives for next-generation businesses

Noteworthy R&D themes expected to deliver value for growth businesses (Step 2) and next-generation businesses

Growth business areas	Solutions	Examples of R&D themes	Technologies and products
GHG reduction	<ul style="list-style-type: none"> Lighter mobility Electrification solutions Decentralized energy management 	<ul style="list-style-type: none"> Strong, lightweight materials Next-generation battery materials Thermal management materials 	Lightweight materials for mobility
Carbon cycle	<ul style="list-style-type: none"> Bio-based polymers Chemical and material recycling CO₂ capture and utilization Hydrogen society 	<ul style="list-style-type: none"> Biomass plastics Plastics recycling technology Artificial photosynthesis Carbon-free hydrogen stations 	Carbon-free hydrogen station
Food and water supply	<ul style="list-style-type: none"> Decentralized food and water systems Alternative food and taste solutions 	<ul style="list-style-type: none"> High-performance packaging materials Food preservation gas 	High-performance packaging materials
Digital society infrastructure	<ul style="list-style-type: none"> Next-generation high-speed communication solutions Semiconductors Next-generation displays 	<ul style="list-style-type: none"> Next-generation communication related materials Advanced semiconductor materials Next-generation display materials 	
Human interface	<ul style="list-style-type: none"> Symbiosis of human and robot solutions 	<ul style="list-style-type: none"> Antibacterial and antiviral materials Non-contact materials 	
Medical advances	<ul style="list-style-type: none"> Regenerative medicine Preventive care Precision medicine 	<ul style="list-style-type: none"> Muse cells Cell culture materials VLP vaccine Genetic medicine Phenotype medicine 	Muse cells VLP vaccine