

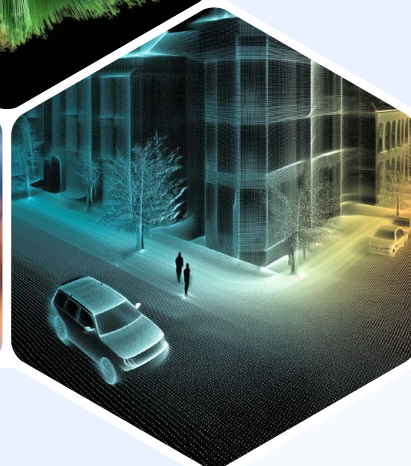
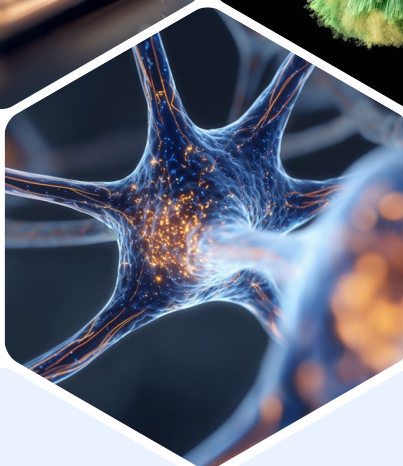
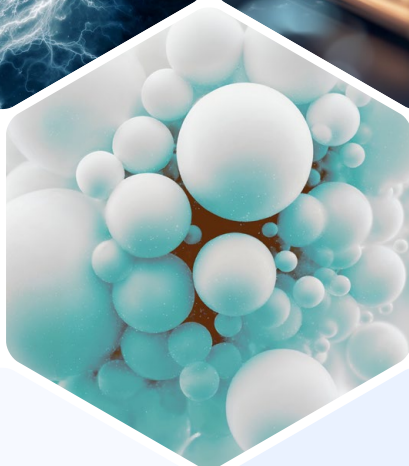
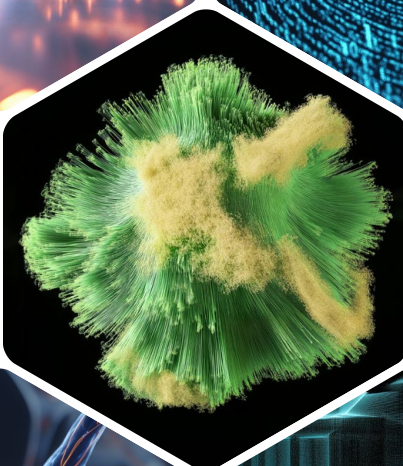
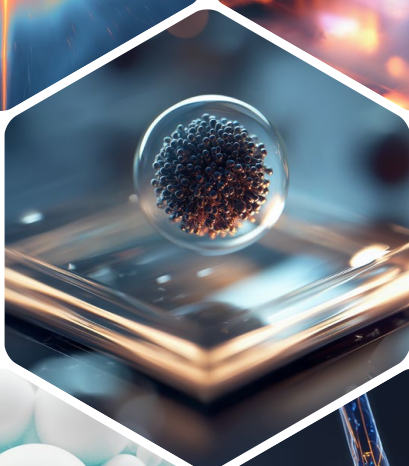
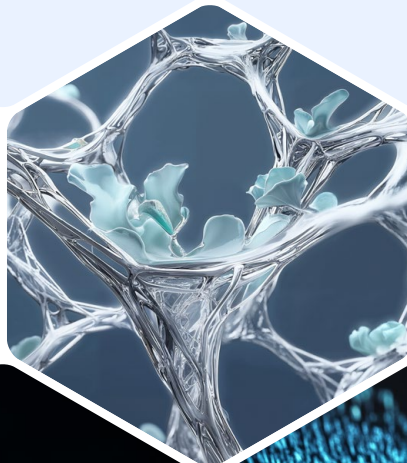
Centre for the
Fourth Industrial
Revolution

WORLD
ECONOMIC
FORUM

In collaboration
with Frontiers

Top 10 Emerging Technologies of 2025

FLAGSHIP REPORT
JUNE 2025



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Foreword



Frederick Fenter
Chief Executive Editor,
Frontiers



Jeremy Jurgens
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World Economic Forum

Every year, remarkable innovations emerge from research labs around the world. Many hold tremendous promise, yet too few successfully make the critical leap from scientific discovery to real-world application. For 14 years, the World Economic Forum's Top 10 Emerging Technologies report has aimed to change that by shining a spotlight on breakthrough technologies with the potential not only to cross this threshold but also to help societies adapt and thrive in the face of complex challenges.

This report serves a clear purpose: to catalyse forward-looking dialogues and shape technology agendas by connecting cutting-edge research with those who can help advance it. By identifying technologies at their turning point – where scientific achievement meets practical potential – we provide leaders in government, business and science with the insights needed to make forward-thinking decisions in a rapidly evolving landscape.

Our work arrives at a pivotal moment. The global innovation landscape continues to evolve, with shifting trade relationships, supply chain reconfigurations and regional dynamics creating new strategic considerations. In this context, the technologies highlighted in this report take on additional dimensions of importance. Some may offer pathways to greater self-sufficiency and resilience; others could serve as bridges for essential international collaboration despite broader tensions. Many represent areas where shared global interests matter more than short-term differences.

Each technology in this report has been carefully evaluated based on its novelty, development progress and transformative potential. From materials that store energy within their structure to new treatments for neurodegenerative diseases, these innovations have moved beyond theory and demonstrated the capacity to strengthen society's ability to adapt and thrive.

What makes this report valuable is that we look beyond what these technologies are to envision what they could create. Each entry includes a strategic outlook that illustrates possible futures if these innovations reach their full potential. Developed in collaboration with the Dubai Future Foundation, these forward-looking scenarios help readers see transformative possibilities and inspire the commitment needed to move these technologies from promising concepts to widespread implementation.

The technologies in this edition reveal exciting patterns: combining energy systems with advanced materials, using biological approaches to improve human health, reimagining industrial processes for sustainability and creating new foundations for trust in connected systems. Each represents not just a technical advance, but a path towards more resilient and sustainable societies.

This work would not be possible without Mariette DiChristina and Bernard Meyerson, co-chairs of our Emerging Technologies Steering Committee. Their leadership has been essential in shaping both this report and the selection process behind it. We are equally grateful to our steering committee members, whose diverse expertise ensures we identify truly groundbreaking technologies with the potential to transform our world.

As the report continues to evolve, this year we've also introduced ecosystem readiness maps that provide practical guidance on the specific actions needed to scale these technologies from promise to impact.

We offer this report not as an endpoint, but as a call to action – a catalyst for the collaboration essential to help these technologies fulfil their promise. In an era of unprecedented challenges and uncertainty, these innovations give us powerful tools to adapt, overcome and thrive.