

3M Forward highlights major global trends, and how 3M materials science innovations help the world build a brighter future

Scientific innovations are in demand as the world responds to climate change and resource scarcity, shifting demographics and social change and the convergence of the physical and digital worlds

ST. PAUL, Minn., May 22, 2023 /PRNewswire/ -- [3M Forward](#) is a program that highlights how materials science-based innovation at scale can help society progress amid three unstoppable forces shaping our planet: climate change and resource scarcity, shifting demographics and social change and convergence of the physical and digital worlds. As part of 3M Forward, 3M scientists, engineers and experts share how their solutions are helping to build a brighter future.

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"The global forces highlighted within 3M Forward are disruptive in nature, but we see them as catalysts for new advances in science and positive societal impact," said Mark Copman, 3M senior vice president, new growth ventures. "Science has the potential to solve the toughest global challenges, and 3M's diverse global portfolio and vast expertise make us optimally positioned to imagine what's possible and build what's next."

Climate change and resource scarcity

Increasing rates of global development and decreasing levels of natural resources have contributed to negatively impacting the environment and accelerating global climate change. Without swift solutions, the effects of climate change will continue to hit vulnerable people, economies and ecosystems—while expanding into new geographies. According to the [3M State of Science Index](#), original third party research conducted by Ipsos, 93% of people globally are concerned about the consequences of climate change and 90% believe science can help minimize its effects.

"We see the broadening consensus for climate action and growing demand for innovative and sustainable solutions reaching an inflection point," said Gayle Schueller, 3M senior vice president and chief sustainability officer. "Our robust innovation pipeline allows us—and our customers—to accelerate and scale up existing science-based solutions in the critical areas of decarbonization, energy transition and circular economy."

One way 3M is accelerating the delivery of new climate solutions to contribute to a low carbon economy is through collaborations, reflected in the company's recent partnership announcement with Svante. [3M and Svante will collaborate](#) to develop Direct Air Capture (DAC) products for sale to the Carbon Dioxide Removal (CDR) industry. Additionally, the company is developing an innovative [3M™ Nanostructured Supported Iridium Catalyst Powder](#) that could make the production of green hydrogen more cost-effective, efficient and obtainable—thereby enabling a more sustainable fuel solution for manufacturing and industries where electrification is difficult, such as long-haul trucking or steelmaking. 3M is also scaling global availability and applications for its [existing portfolio of climate solutions](#), which are creating energy-efficient homes and businesses, reducing raw material use and waste, optimizing electric vehicles and modernizing the grid to integrate renewable power

generation in markets around the world.

Shifting demographics and social change

Greater global connectivity means shifts to education, sustainability, equity and technology. It can have impacts far beyond their geographic origin. These shared social changes offer personal and professional opportunities but also present challenges. For example, urbanization rates continue to grow as the world redefines the future of work and consumerism with technology, but a diminishing population in more rural areas can create labor shortages and impact supply chains.

"3M is innovating to meet the shifting needs and values of people around the world—whether they need solutions for the evolving nature of their work or within their homes," said Mike Kesti, senior vice president, 3M corporate research lab. "3M's collection of technology platforms, coupled with our robust and global manufacturing infrastructure, enable us to efficiently scale and deliver impactful solutions to our customers and society."

The products and technologies that emerge from 3M's innovation pipeline are as diverse as the people whose lives they improve. In healthcare facilities, the company's [Clinician Solutions Portfolio](#) is reducing the administrative burden on health care providers so they can better focus on their patients and create better health outcomes. To address labor challenges within manufacturing while improving productivity and quality, 3M is introducing automated technologies like the [3M™ Finesse-it™ Robotic Paint Repair System](#), which works with third-party vision systems to automatically identify and repair common paint defects on automotive production lines. And to empower new ways of working, 3M recently launched [The Post-it® App for Microsoft Teams](#). The app provides the technology to support hybrid teams, allowing workers to share hand-written notes with their colleagues and take action on projects, no matter where they live or work, providing more freedom and flexibility.

Convergence of the physical and digital world

Software, sensors, artificial intelligence and human-machine interfaces make up a fast-evolving global ecosystem that powers industry, commerce and daily life. In the wake of the COVID-19 pandemic, people are more engaged with these interfaces and more dependent on them. Rapid technological advancements and connected systems are shaping a new reality where the physical and digital increasingly overlap—an intersectional environment where 3M thrives.

"3M technologies deliver more seamless connectivity between the physical and digital worlds," said John Banovetz, 3M executive vice president, chief technology officer and environmental responsibility. "At 3M, we are advancing industrial automation to streamline processes and leverage 3M materials in new ways, boosting the power and performance of our customers' products and optimizing their production processes."

3M is leading the way in [optical materials technology](#) and enabling growing sectors such as virtual reality (VR). 3M has been an industry leader in successfully demonstrating the viability of pancake lenses in VR headsets. Enabled by 3M's patented reflective polarizer technology, pancake optics reduce the size of headsets and significantly improve image resolution. These benefits are fueling future growth and adoption of VR technology as it promises to become more mainstream. In industrial applications, advancements such as the [3M™ On Demand Bonding System featuring 3M™ VHB™ Extrudable Tape](#) blend automation with adhesive science to help reduce waste and improve manufacturing process efficiency. And for consumers, 3M is developing connected solutions for existing product offerings, like the state-of-the-art [Filtrete™ Smart HVAC Air Filter](#). This technology helps trap and capture allergens and other microscopic particles, like bacteria and viruses, from the air in homes. It tracks the life of the filter based on airflow and usage – not just time – so homeowners never have to worry about changing their filter too early or too late.

Delivering science-based innovations at scale for a brighter tomorrow

As the transformative forces of climate change and resource scarcity, shifting demographics and social change and convergence of the physical and digital world continue to shape our reality, 3M applies the latest materials science-based innovations and leverage its full capabilities to deliver meaningful solutions that help society progress. With R&D capabilities in 55 countries and more than 7,000 R&D specialists and scientists, 3M innovation has led to more than 132,000 patents and 60,000 products across diverse industries. The outcomes and impact of 3M's global portfolio and deep expertise allow the company to offer scalable scientific solutions and help build a brighter future for all.

To learn more about how 3M solutions are improving lives around the world, and where 3M is focused on innovating next, visit [3M.com/Forward](https://www.3m.com/Forward).

About 3M

3M (NYSE: MMM) believes science helps create a brighter world for everyone. By unlocking the power of people, ideas and science to reimagine what's possible, our global team uniquely addresses the opportunities and challenges of our customers, communities and planet. Learn how we're working to improve lives and make what's next at [3M.com/news](https://www.3m.com/news) or on Twitter at [@3M](https://twitter.com/3M) or [@3MNews](https://twitter.com/3MNews).

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