

It's All in the Numbers for Tokyo

With its highly educated talent pool of STEM (science, technology, engineering and math) graduates, Tokyo attracts startups and established companies alike. The city generates a multitude of ideas, patents and new products. In fact, it had the most patent applications — 1.11 million patents applied — among the 20 global cities an Elsevier 2021 report reviewed.



Tokyo 2020: Olympic Medals Recycled from Electronics

Used electronics devices were recycled in a nationwide Japanese effort to produce the Olympic medals for the Tokyo 2020 Games. The two-year effort collected enough recycled material to produce about 5,000 bronze, silver and gold medals with 90% of Japanese cities, towns and villages participating by donating devices. The recycling campaign produced 70 pounds (32 kilograms) of gold, 7,700 pounds of silver and 4,850 pounds of bronze from nearly 80 tons of old phones and laptops, said Tokyo 2020 spokesperson Hitomi Kamizawa. Using a process of dismantling, extracting and refining by contractors, the recycled material was molded into Junichi Kawishi's design concept for the medals — that beat 400 other entries in a Tokyo 2020 competition.

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Electric Vehicles Take to the Roads

It's not just auto manufacturers making electric vehicles (EV). Sony is positioning its newest EV to be a "personal internet device," and has been conducting road tests with its concept car, the Vision-S EV. Sony's high-performance image sensors use artificial intelligence (AI) to detect surroundings. The vehicle also has 33 sensors which include radar, lidar and the cameras. The Sony Vision-S Concept Car debuted at CES® 2020. Tokyo's startup **PJP Eye** is offering an alternative to lithium-ion batteries used in electric cars. These carbon batteries could change the EV industry as their dual carbon batteries are made of environmentally-friendly organic materials. The life cycle of the battery is roughly 10 years, instead of the two to three years of lithium-ion batteries. **PJP Eye** also has plans to bring its own charging station to market, that features rapid charging.

INNOVATION AT THE OLYMPICS

The Tokyo Games were a showcase of technology that included robotic trains and taxis for the athletes, instant translation tech and 8K broadcasts. Many Olympians used virtual reality, analytics and AI to train and track their performance. Intel and Alibaba launched 3D Athlete Tracking (3DAT) that uses AI and computer vision to create a 3D mesh to allow analysis of real-time and biomechanical data for athletes and coaches, as well as provide insights to fans on how athletes performed.

And Toyota Motor Corp's AI-powered self-driving field support robots (FSR) equipped with cameras and sensors were used to retrieve items like javelins while a pair of human support robots (HSR) and delivery support robots (DSR) guided spectators and even provided snacks.

Toyota Motor Corp. Tokyo 2020 Olympics mascot Miraitowa. ❤️



Getting the Ball Rolling in Space Tech Tokyo

A collaboration between the Japan Aerospace Exploration Agency (JAXA) and Tokyo-headquartered toy-maker TOMY, has produced a baseball-sized robot to explore the moon surface. The toy company's expertise in small, moveable parts helped produce this ultra-lightweight robot that can hitch a ride on the lunar lander. The bot can easily roam the uneven surface of the moon and also has a camera to capture photos.

