

# Toyota Moves into Top Five of Intellectual Property Owners Association Rankings

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**ANN ARBOR, Mich. (Feb. 14, 2023)** – For the 9<sup>th</sup> consecutive year in 2022, Toyota was awarded more patents than any other automaker by the United States Patent and Trademark Office according to an annual listing by the Intellectual Property Owners Association (IPO). In addition, Toyota moved up the ranks in overall patents being awarded to a single company, to fourth overall this year.

The ranking represents the highest ever achieved in the list’s 40-year history, further reinforcing its position as a leader in technology and innovation among the world’s best-known brands. Of the 3,056 patents the company was awarded in 2022, nearly half are for future mobility, including 26 percent around electrification targeting vehicles, batteries and materials, and 14 percent focused on automation and safety.

“As we aggressively pursue an electrified future, Toyota continues to amp up its investment in innovation,” said Sandra Phillips-Rogers, senior vice president of Corporate Resources and chief legal officer at Toyota Motor North America. “Our engineers, researchers and scientists are responding with technology that puts Toyota in the best position both now and for years to come.”

“At Toyota, we nurture invention, and it shows in our performance on the IPO’s listing year after year,” said Frederick Mau, intellectual property counsel and director of Patent Licensing for Toyota Motor North America. “This not only benefits Toyota, but industry and society as a whole, since some of our intellectual property is available for others to license and discover new applications.”

Patents awarded in 2022 include:

- **Optimizing Energy Transfer During EV Charging** – Systems to optimize the amount of energy transferred to individual EVs from multiple sources and along a travel route, tracking through blockchain technique, in order to efficiently use energy sources.
- **Vehicle Control Based on Driver Engagement** – Systems and methods, developed by Toyota’s Collaborative Safety Research Center (CSRC), for safe maneuver and control of a vehicle using driver-state detection to measure ability of the human to safely handle external environment anomalies.
- **Water System for a Fuel Cell Vehicle** – Utilizes the water generated as a byproduct of the hydrogen fuel cell to provide further value to the operator of the vehicle. This includes functions such as increasing radiator capability on demand through misting as well as providing water for other on-board vehicle systems.
- **Seat Massaging Technology** – A shape memory alloy actuator that enables a new type of seat massage for a shiatsu-style experience. (Available for licensing through Toyota IP Solutions)
- **Vibration Isolation for Bicycles** – A new vibration isolator seat post for bicycles to mitigate bumps from pavement otherwise felt through the saddle seat. (Available for licensing through Toyota IP Solutions)

Globally, Toyota spends more than \$1 million per hour on R&D to ensure that the company remains a leader in mobility and vehicle technology that is safe, high-quality, and appealing to both our customers and beyond.