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biggest breakthroughs

Isaac M. O'Bannon • Jun. 30, 2014

The [Intellectual Property & Science business](#) of Thomson Reuters has released a new report titled, "[The World in 2025: 10 Predictions of Innovation](#)," which offers the company's predictions on the landscape of science and technology in 2025 by mining global patent data and scientific literature.

To conduct the study, researchers identified the top 10 emerging scientific research fronts based on an analysis of citation rankings using Thomson Reuters [Web of Science](#). They next looked at global patent data in the [Derwent World Patents Index](#) to identify the top 10 patent fields with the highest number of inventions containing a priority date of 2012 and beyond. The resulting technology areas with the highest level of commercial and scientific research interest were then reviewed to identify hot spots of innovation that will lead to tomorrow's biggest breakthroughs.

Following are some of the study's predictions of innovation in 2025:

- **Solar is Largest Source of Energy on the Planet:** According to the most highly-cited scientific research papers of the last two years, improvements in photovoltaic technology, chemical bonding and the use of photocatalysts are making the process of harvesting and converting the sun's energy much more than a novelty for the environmentally conscious; solar power will be used for the masses.
- **Teleportation Testing Is Common:** Thanks to the research that went into the Higgs Boson project, Scotty may soon be beaming things up. Scientific literature has exploded around the Higgs Boson, with over 400 citations to the 2012 study. And, recent patent applications related to Higgs Boson address "a body accelerating at the speed of light and growing into the square of the speed of light."

- **Everything Will Be Digital, Everywhere:** From the smallest of personal items to

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- **DNA Mapping at Birth Is the Norm:** Analysis of the human genome continues to be one of the hottest areas of scientific research, with one recent paper collecting over 1,000 citations. Advancements in nanotechnology coupled with more widespread Big Data technologies make in vivo measurements, for diagnoses to conduct precise, cell-level screenings, possible.

Additional predictions include: Cancer Treatments Have Very Few Toxic Side Effects; Petroleum-Based Packaging Is Replaced by Cellulose-Derived Packaging; Electric Air Transportation Takes Off; Food Shortages and Food Price Fluctuations Are Things of the Past; and Dementia Declines.

“While we do not purport to own a crystal ball, we do have the next best thing: citations to scientific literature and patent content. When analyzed in aggregate, these provide a fascinating window into innovations that will change our lives in the future,” said Basil Moftah, president, Thomson Reuters IP & Science. “By analyzing current R&D activity and commercial pipelines, we are shining a spotlight on some of the most exciting developments that will emerge over the next decade.”

The full report of [The World in 2025: 10 Predictions of Innovation](#), provides snapshots of research-citation-and-patent-filing metrics for each technology area, alongside commentary that defines the key trends of these nascent technologies.

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