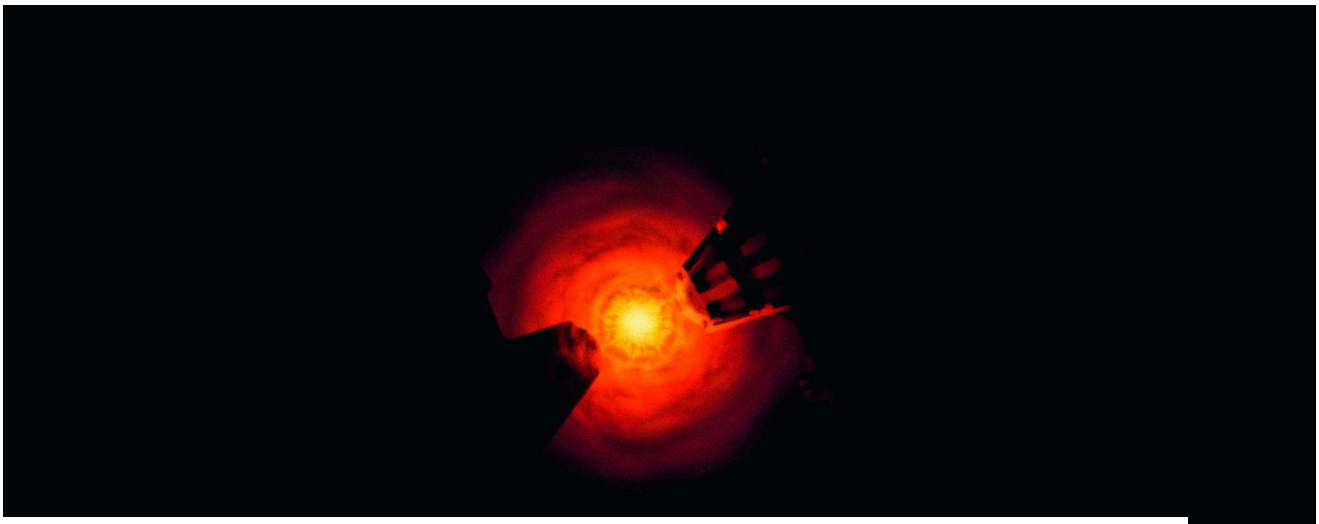

ATHANASSIOS KALIUDIS

Here comes the sun

How the laser can solve our energy problems — and why we can look forward to warp drives offering faster-than-light travel.

"Please tell me this doesn't run on gas! Gas explodes, you know!" I had almost forgotten that scene from "I, Robot" – the US blockbuster made nearly 15 years ago. The movie is set in the year 2035, when artificial intelligence has become a reality and all cars are electric. In this scene, Del Spooner (played by Will Smith) digs out an old gasoline-engine motorcycle – to the absolute horror of his companion Susan Calvin. However over-the-top her reaction may seem, the movie's message is clear: nobody in 2035 wants vehicles that run on gas. Even the thought of it seems absurd. The future clearly belongs to electromobility. I think that's great, though at the same time I worry about the CO2 footprint. After all, I find myself wondering, where will we get the clean power to charge all those electric cars?

As I tend to do in these cases, I find the answer in science fiction: nuclear fusion, the power of the sun! In the CBS series "Star Trek: Discovery," the gargantuan Imperial Palace starship roams the galaxies in a parallel universe. And it is, of course, fusion-powered. That basically means it uses the controlled fusion of deuterium and tritium in a thermonuclear reaction, tapping into a practically inexhaustible source of energy to keep the ISS Charon permanently powered up. You might argue, of course, that outside the realms of science fiction we're still a long way from achieving controlled nuclear fusion – and you'd be right. But I can't help thinking about what Jules Verne wrote in "Journey to the Center of the Earth" in 1864: "Anything one person can imagine, other people can make real." And that's exactly what is happening at the National Ignition Facility in Livermore, California, where researchers are working on the world's most powerful laser. Scientists hope the laser facility, with a surface area as large as a World Cup field, will ignite an artificial sun by delivering a few megajoules of energy, creating a fusion reactor that could supply enough clean energy for all those electric cars. So have no fear! The clean energy source to power our electric vehicles is on its way. And by the way, Mr. Verne, I can also vividly imagine time travel, teleportation and warp drives that distort space-time and accelerate starships to speeds faster than light ...

Could an artificial star ignited by a laser be the solution to our search for cleaner energy? What do you think? Let me know by email: athanassios.kaliudis@de.trumpf.com

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