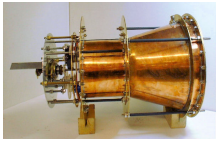


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Electromagnetic drive  
SPR Ltd.

## [Emdrive Thrust Technology Will Dominate Space](#)

### *Chinese build largely-contested "impossible" drive*

China's space attempt may be fueled by the newly-emerging technology that the majority of scientists are now contesting. Chinese researchers are currently trying to build the "Emdrive" (electromagnetic drive), which would change all space propulsion systems in case it becomes functional.

Basically, the technology relies on converting electricity into thrust by means of microwaves, without contradicting the laws of physics. The original idea belongs to British scientist Roger Shawyer and, after the British government seemed to have lost interest in it, it has been bought (read financed) by a Chinese company. Currently, the project is undergoing at the Northwestern Polytechnical University (NPU) in Xi'an, China, under the command of Professor Yang Juan who has gathered a lot of experience in the field of microwave plasma thrusters, a similar hardware technology based on a different theory.

The engines built by Shawyer's company (Satellite Propulsion Research - SPR) for demonstrative purposes produce thrust by means of a microwave-filled tapering resonant cavity. Australian physicist John Costella says: "It is well known that Roger Shawyer's 'electromagnetic relativity drive' violates the law of conservation of momentum, making it simply the latest in a long line of 'perpetuum mobiles' that have been proposed and disproved for centuries. His analysis is rubbish and his 'drive' impossible." That's an example of how Shawyer's theory is perceived by other experts. But no great idea came to happening without a strong public disbelief and opposition. Some even claim that, although SPR's work is based entirely on Einstein's principles, this particular theory and device type violates Einsteinian physics laws and, as such, it must be false or wrong at some point.

In reply, Shawyer told Danger Room that "NPU started their research program in June 2007, under the supervision of Professor Yang Juan. They have independently developed a mathematical simulation which shows unequivocally that a net force can be produced from a simple resonant tapered cavity. The thrust levels predicted by this simulation are similar to those resulting from the SPR design software, and the SPR test results."

Comparisons between the C-Band Emdrive and NASA's NSTAR ion thruster clearly demonstrate the superiority of the former: Emdrive obtains 85 mN of thrust using about 25% of the power that NSTAR uses to produce 92 mN (about a third of an ounce or 9 grams). It also weighs only 7 kg, compared to NSTAR's 30, not to mention the propellant: while NSTAR uses only 10 grams an hour, Emdrive uses... well, none whatsoever, as it relies on energy.

If the technology is proved to work, its applications are fantastic. The endurance of satellites would be enhanced, as well as their maneuverability, eliminating the toxic risk factor along the way. The probes sent into the deep space would exhibit faster speed, longer trek abilities, and they would be able to stop at any time, like when they reach their target or meet something interesting along their journey. Based on Shawyer's calculations, a solar-powered Emdrive thrust would be capable, in theory, to carry a manned mission to Mars in 41 days' time.