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Exploding batteries can cause damage to the human operator. Notebooks do not survive.
Life Hacker

Battery-Exploding Notebooks Finally Find their Cure

The new technology uses solid compounds instead of the traditional Li-Ion electrolytes

A group of German researchers have just announced a new type of lithium-ion battery that promises to be safer and more reliable, even when used in extreme conditions. Recent incidents involving exploding batteries have put their reliability under question. You might remember the massive [Sony battery recall](#) in 2007 or the extended investigations [conducted by LG Chem](#) right after notebooks powered by its batteries started to catch fire. According to the group of researchers at the Fraunhofer Institute for Silicate Research ISC, the new batteries are extremely safe thanks to some crucial innovations in their manufacturing process. "We have succeeded in replacing the inflammable organic electrolytes with a non-flammable polymer that retains its shape," said ISC team leader Kai-Christian Moller. Batteries built with lithium-ion technology are widely used in consumer electronics appliances, as they are more efficient and long-lasting than the previous generation of alkaline devices. Lithium-ion cells feature high power density and an easily rechargeable mold. The "side-effect" in using lithium-ion mixtures is that the compound is less stable than other power sources, and it can get out of control when it gets overheated. For instance, when the battery pack heats up, the built-in flammable organic electrolytes usually spark into flames. "This considerably enhances the safety of lithium-ion batteries. What's more, because it is a solid substance, the electrolyte cannot leak out of the battery," said Moller. According to the ISC researchers, they had to face numerous technical challenges during the development of the new technology, as the solid-based compounds are less conductive than the lithium-ion electrolyte. Moller claims that they solved the issue by using multiple interconnected cells. "For example, we can use coupling elements with two, three or four arms. As a result, we have more possibilities," he detailed. The new technology is not one of the miracles that take years until they get fully developed. ISC's invention is already functional, and the team is ready to showcase their prototypes at a trade show that will take place in Germany later this month. However, mass-availability is a thing of the future, as the technology needs to be tested and validated.