**PRESS RELEASE**

**Redefining e-waste recycling: Austrian industrial designer Franziska Kerber in top 10 innovators of the Young Inventors Prize 2025**

* **Electronic waste is one of the fastest-growing waste streams globally, as most small electronic devices are encased in plastic, making them difficult to recycle**
* **Kerber has developed PAPE, an alternative to plastic and fibreglass in small electronic devices**
* **The Austrian inventor is one of ten global innovators for the Young Inventors Prize, to be awarded by the European Patent Office (EPO) on 18 June 2025**

**Munich, 6 May 2025** – Roughly 62 million tonnes of e-waste are generated every year yet only 22% is recycled, according to [the UN agency for digital technologies.](https://www.itu.int/hub/2024/04/the-world-generated-62-million-tonnes-of-electronic-waste-in-just-one-year-and-recycled-way-too-little-un-agencies-warn/#:~:text=The%20latest%20Global%20E-waste%20Monitor%20shows%20that%20the,per%20cent%20of%20that%20waste%20was%20formally%20recycled.) Small electronics, such as routers and smoke detectors, add to this growing crisis. Austrian industrial designer Franziska Kerber (24) developed PAPE, a paper-based alternative for electronic device casings and printed circuit board (PCB) substrates. Using paper as manufacturing material enables the parts to be dissolved, simplifying recycling and allowing electronics manufacturers to recover valuable components. Her innovation has **earned her a place among the ten global innovators, for the Young Inventors Prize 2025**, **known as Tomorrow Shapers,** selected from over 450 candidates by an independent jury.

**Transforming electronics with paper-based components**

Most small electronic devices are encased in plastic components—a material that is difficult to recycle when combined with others. The challenge lies not in the material itself, but in the lack of proper separation and reuse processes. This is precisely where Kerber's innovation comes in: PAPE is a paper-based alternative to conventional housing parts and was designed with a circular recycling process in mind. Instead of being shredded—where valuable materials on PCBs are often lost—PAPE components can be dissolved in a targeted way. This allows circuit boards, and even electronic components (if recyclable PCBs are used), to be recovered for reuse. PAPE is made from unused paper fibres, is durable and biodegradable—simplifying disassembly and material recovery.

**Combining design and sustainability**

Kerber’s move toward sustainable materials was inspired by her father, a physicist and award-winning inventor, who introduced her to **dissolvable circuit board technology.** During her industrial design studies at FH Joanneum, she became increasingly interested in recycling strategies and material reuse. She began experimenting with materials such as densely compressed paper fibres and conducted several design iterations to refine PAPE’s housing structure, testing airflow and heat resistance to ensure it could safely accommodate electronic components. **Kerber realised that recyclable circuit boards alone weren’t enough**—electronics needed a fully circular design: *“Even if researchers create dissolvable, recyclable circuit boards, it doesn’t really change anything if the rest of the product just ends up as waste again. The whole design has to evolve—otherwise, we’re just shifting the problem instead of solving it.”*

She is now exploring partnerships with startups and industrial companies working on recyclable PCB technology to bring PAPE closer to market.

**The Young Inventors Prize celebrates worldwide innovators 30 and under using technology to address global challenges posed by the United Nations Sustainable Development Goals (SDGs).** Kerber’s invention supports SDG 9 (Industry, Innovation, and Infrastructure) and SDG 11 (Sustainable Cities and Communities), by reducing e-waste and promoting sustainable design.

**The winners of the 2025 edition will be announced during a ceremony** [**livestreamed**](https://www.epo.org/en/news-events/young-inventors-prize/2025-event?mtm_camp=pressrelease&mtm_key=yip2025&mtm_med=press) **from Iceland on 18 June 2025.**

Find more information about the invention’s impact, the technology and the inventor’s story [here](https://www.epo.org/en/news-events/young-inventors-prize/franziska-kerber?mtm_camp=pressrelease&mtm_key=yip2025&mtm_med=press).

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**About the Young Inventors Prize**

Aimed at individuals 30 and under, the Young Inventors Prize showcases the transformative power of youth-driven solutions and recognises the remarkable young people paving the way to a more sustainable future. Established in 2022, trophies were first handed out during the European Inventor Award ceremony. From 2025 onwards, the Prize will move up a gear with its own dedicated event, held separately from the Award. Among the 10 Tomorrow Shapers selected for each edition, three will be awarded a special prize: World Builders, Community Healers, and Nature Guardians. In addition, a People’s Choice winner, voted by the public online, will be revealed. Each Tomorrow Shaper will receive EUR 5 000, the three special prize winners will each receive an extra EUR 15 000. The People’s Choice winner will be awarded an additional EUR 5 000. [Read more](https://www.epo.org/en/news-events/young-inventors-prize?mtm_camp=pressrelease&mtm_key=yip2025&mtm_med=press) on the Young Inventors Prize eligibility and selection criteria.

**About the EPO**

With 6,300 staff members, the[European Patent Office (EPO)](https://www.epo.org/?mtm_camp=pressrelease&mtm_key=yip2025&mtm_med=press) is one of the largest public service institutions in Europe. Headquartered in Munich with offices in Berlin, Brussels, The Hague and Vienna, the EPO was founded with the aim of strengthening co-operation on patents in Europe. Through the EPO's centralised patent granting procedure, inventors are able to obtain high-quality patent protection in up to 46 countries, covering a market of some 700 million people. The EPO is also the world's leading authority in patent information and patent searching.