



spgprints®

Advancements in Printed Electronics Applications

Use case: Discovering the Heated Wall

Printing tomorrow.

Discovering the Heated Wall

Slide into your car on a winter day, and you'll welcome the warmth of a heated seat – but have you ever wondered where the heat was coming from? Inside your heated seat are positive temperature coefficient (PTC) heaters. Printed by machines and powered by your car's battery, these wafer-thin sheets can warm instantly, providing a safe and cost-effective heat source.

The same printed electronics used in car seats and caravans could have an even more exciting application – heating our homes. Heated walls, lined with printed electronics sheets, are cheap to manufacture, easy to install, and highly efficient – helping to save energy and increase sustainability.

So why aren't we using them, and what would happen if we did?



The heated wall: expanding an existing concept

Underfloor heating using PTC printing isn't new. In fact, the technology has been used to heat caravans for years. The heated layer is ultra-thin (typically under 0.5mm) and can be shaped around the caravan's floor, providing total coverage. The heaters are wired to the power supply, warming the floor and distributing heat throughout the cabin. As well as being easy to install and efficient to operate, it's safer with all wires and connections being hidden away beneath the floor.

The technology is tried and tested in our caravans and car seats, so why aren't we using it in our homes?

"In a world where energy costs are rising, we all need to cut our carbon footprint, and that starts with reducing our reliance on fossil fuels."

The [EU](#) is on a mission to save energy, diversify supply, and shift to more sustainable sources. Why? Because domestic consumption of energy – in particular, the natural gas used to power boilers – is hugely expensive and damaging to the environment, says the [European Commission](#).

We all have a responsibility to explore new and energy-efficient ways to heat our homes. By applying the same concept used to heat our cars and caravans to heat the walls in our homes, PTC can have an even more significant impact.

It's a proven technology with massive energy-saving potential. Here's how it works and how we can use it.



A great case for roll-to-roll rotary screen production

The beauty of this approach is its simplicity, as there is no need for external electronics to regulate heat. Heat panels are simple to design, engineer, and manufacture. They're highly effective, user-friendly, and ideal for use in our homes. Above all, this application is perfectly suitable for large roll-to-roll screen production. Besides the high volumes, the continuous PTC patterns allow for non-stop printing.

The Benefits and Beyond

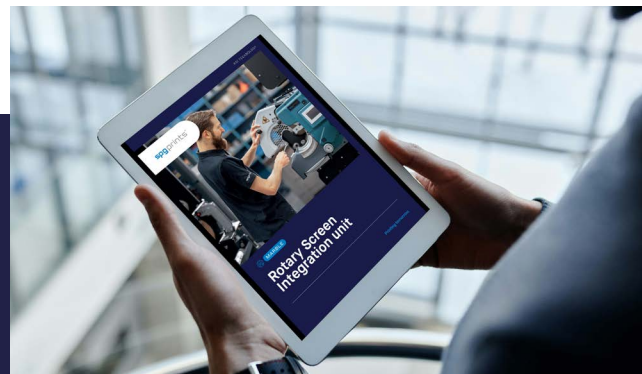
Installing a gas boiler or heat pump-powered heating system is a complex job. You need to feed a network of pipes through the house to send and return the hot water to radiators mounted on walls. In the average home, there are over 250 meters of piping to design, install, and maintain.

Compare that to a heated wall panel that can be printed to the correct size and specifications. Installation by a qualified electrician should take less than an hour, after which you're ready to switch it on, sit back, and enjoy the heat. Even better, you can **position the panels anywhere** in the room and over them in plaster, paint, wallpaper, or pictures. Your heating system is hidden behind the wall instead of using an inconvenient and ugly radiator.

PTC is a proven technology with established operating parameters. Unlike your heating system that needs an annual service, balancing, and flush, you can safely operate wall panels for over ten years. It's genuinely fit-and-forget technology.

The RSI[®] production line of SPGPrints is the perfect solution for Industrial Printing, as it offers maximum freedom in tailoring your printing operations to match your requirements. In addition, the screens are available with various mesh counts and open areas to provide top-quality results Printed Electronics applications. Besides flexibility, RSI[®] production is also known for its economical, reliable and rapid manufacturing processes. Do you want to know more about the possibilities of using rotary screens for Industrial Printing?

→ [Download the brochure here](#)

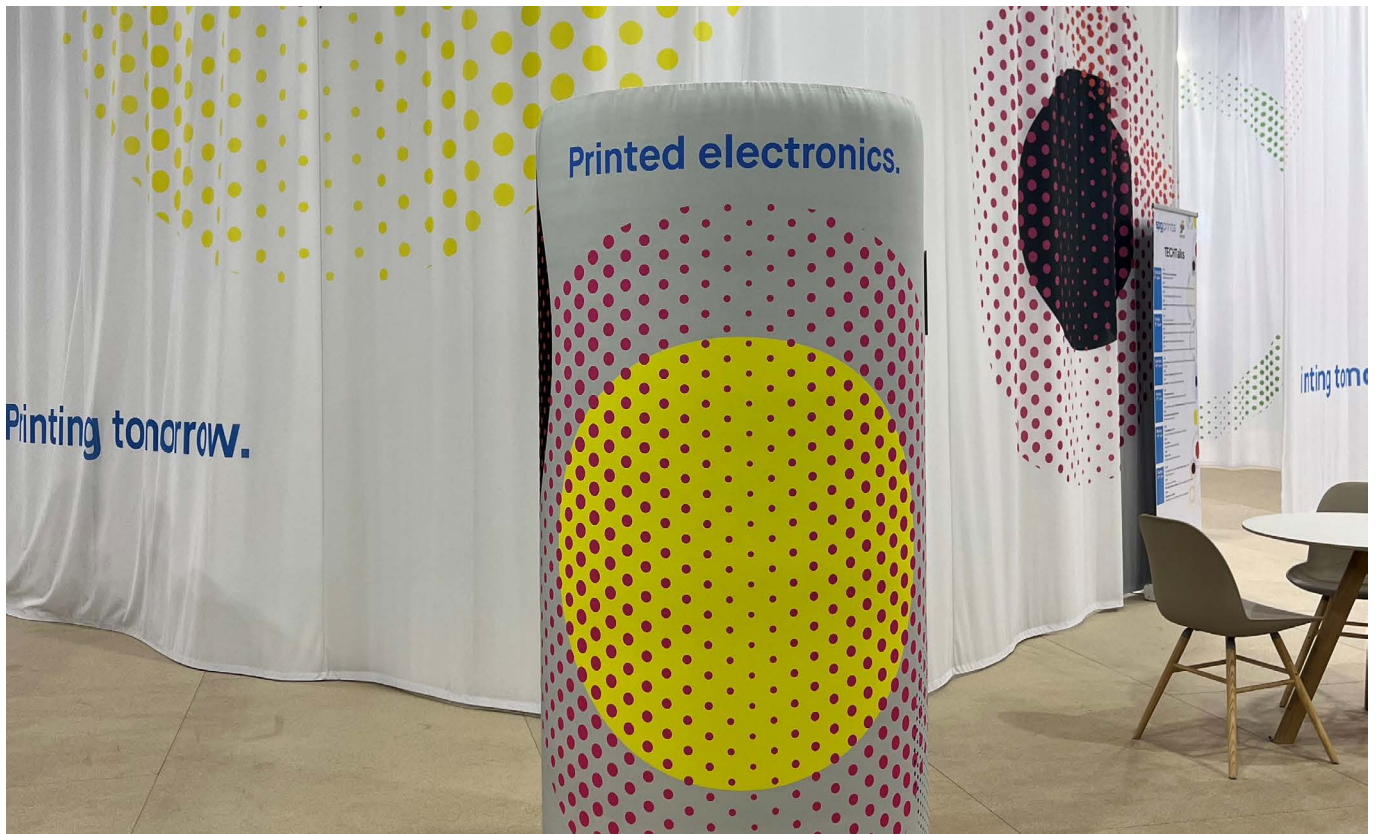


Sustainable choice

Heated wall panels will reach the desired operating temperature in seconds, whereas your old gas boilers or brand-new heat pump can take hours to effectively heat a home. **You can switch heated panels on and off in seconds**, keeping in total control of energy usage and efficiency.

Only want to stay in a single room and save energy? Heat panels enable you to **optimize energy usage**, managing costs in a way that's simply impossible with alternatives.

The EU is moving rapidly toward sustainable electricity and away from gas to protect the planet and break reliance on imports from Russia. Heat panels are highly energy efficient, making them one of the most environmentally friendly heating systems available. It's a sustainable choice for the future.





Conclusion: The Sky is the Limit

The heated wall is just one brilliant application of Printed Electronics. Imagine integrating this technology into wallpaper, a solution that combines aesthetics and style with sustainable heating. But why stop there? The possibilities are vast, and with experts in Printed Electronics ever eager to collaborate, our imagination is the only limit to innovation.

SPGPrints' RSI® line is the perfect production method for these kinds of applications. The possibilities are endless. Curious to explore them? Schedule your personal One-on-One with our specialist Ben here and challenge him with all your questions!

→ [Schedule a One on One](#)

About SPGPrints

Throughout our unique history, SPGPrints developed into an internationally acknowledged authority in textile printing, dedicated to bringing colour to the world. In recent years, our unique rotary screen printing concept allowed us to move beyond textile printing and offer solutions for labels, banknotes, COVID-19 testing strips, and more. And while still a distinct leader in rotary printing, we have also become a pioneer and a key player in the market for digital printing. In 1991 we were the first in the industry to launch a digital textile printer. Not much later we started producing ink for all leading digital technologies. Over the years, we have been awarded over 300 patents and we have built an international network in more than 100 countries. These days our focus on innovation is as strong as ever with taking care of our planet as a constant priority. We take pride in putting our customers first, letting their ambitions inspire us, and deploying our expertise, resources and network to help them to achieve their goals. Our solutions are designed to empower customers worldwide in all stages of the printing process; from pre-press to printing, from textile to industrial – and beyond. That is the global impact of a global player.

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