New EMI shielding technology boosts performance for 5G mobile standards

Electromagnetic interference (EMI) is increasingly becoming a challenge today – especially for new generation mobile phones and 5G technology. Heraeus now offers a new complete solution consisting of silver ink, inkjet printer and curing equipment for EMI shielding. This system is both less expensive and much more effective than all other options available today.

Electromagnetic interference can disrupt electronic devices, equipment and systems – in consumer electronics like mobile phones but also in automotive, medical or aerospace electronics. With higher performances of today's electronics and new 5G technology, EMI shielding becomes more and more important to have working devices. As frequencies increase, so is the amount of electromagnetic interference.

To tackle this problem Heraeus developed a new solution, which is based on a silver ink printer that ensures a proper functioning of high-frequency on-board chips and their ultra-fast data transmission. The system consists of a special silver ink formula and a manufacturing machine that can apply the shielding coating followed by special ultraviolet and infrared equipment for curing.

"In a 5G world, the Heraeus EMI Shielding Solution is the most cost-effective answer for technology that is going faster, higher and further every day," says Franz Vollmann, Head of Heraeus Printed Electronics.

Better shielding with less investment

Heraeus’ new EMI shielding technology saves considerable costs and effort in comparison to traditional shielding technologies like metal housings or vacuum-based sputtering.

In contrast to sputtering, the protective silver layer is applied to the carrier object with sub-micrometer precision by using printing nozzles.

"Our new EMI Shielding Solution will replace sputtering technology. It not only saves material and costs, but it also leads to a much
better shielding performance. This is necessary for further miniaturization," says Franz Vollmann, Head of Heraeus Printed Electronics.

Silver inkjet-printing also offers further decisive advantages over sputtering in terms of cost and efficiency. The investment cost for the new Heraeus system is around US $500,000 (depending on the machine configuration), which is a fraction of the price of a sputtering system. At the same time, the number of units able to be produced per hour is between 12,000 and 15,000 – more than three times the output from a sputtering system.

"Adding the saved investment, our inkjet process is 15 times better at one million parts per year," explains Vollmann.

**Linking Innovation**

Previous inkjet solutions often failed due to unsuitable inks, which irreparably clog the printheads. The Heraeus advantage lies in its innovative ink molecular structure: Based on Metal Organic Decomposition (MOD), the silver components are not individual ink nanoparticles, but linked elements of organic molecular chains.

After being applied, the organic parts evaporate through the application of heat – only the silver remains. In this way, the heads remain unclogged by individual particles, which saves considerable costs and effort.

NOTE TO JOURNALISTS: You are attending Semicon West in San Francisco? Meet our team at booth 5557 to learn more about our new EMI shielding technology.

Please find further information at [www.heraeus-printed-electronics.com](http://www.heraeus-printed-electronics.com)

**About Heraeus**

A globally leading technology group, Heraeus is headquartered in Hanau, Germany. Founded in 1851, it is a family-owned portfolio company which traces its roots back to a pharmacy opened by the family in 1660. Today, Heraeus combines businesses in the
environmental, energy, electronics, health, mobility and industrial applications sectors.

In the 2018 financial year, Heraeus generated revenues of €20.3 billion. With approximately 15,000 employees in 40 countries, the FORTUNE Global 500-listed company holds a leading position in its global markets. Heraeus is one of the top 10 family-owned companies in Germany.

With technical expertise, a commitment to excellence, a focus on innovation and entrepreneurial leadership, we are constantly striving to improve our performance. We create high-quality solutions for our clients and strengthen their long-term competitiveness by combining unique material expertise with leadership in technology.

Media Contact

Sofie Volk
Senior Manager External Communications
Heraeus Holding GmbH
Heraeusstraße 12 - 14
63450 Hanau, Germany
Tel   + 49 (0)6181 355 78 5784
Mobile   + 49 (0) 176 178 428 72
E-Mail: sofie.volk@heraeus.com