

## **Digital printing activities at RISE for printed electronics applications**

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Printable functional inks made from conducting polymers, carbon, silver and other materials allow us to create electronic components and circuits with printing equipment. The process can be automated and allows for the mass production of electronics known as Printed Electronics. The field is undergoing rapid development. Printed electronics components are for instance transistors, conductors, resistors, displays, sensors, buttons/actuators, batteries and antennas. These components may be integrated in intelligent packaging, medtech devices, automotive applications, in buildings – in almost any field. The field is multi-disciplinary, at the intersection of electronics design – chemistry – physics and ranges from fundamental research in polymers (materials science) to applied research with confidential applications in a multitude of market segments, often projects where expertise from universities, research institutes and industrial players collaborate.

Among all the printing equipment used at the Printed Electronics Testbed facility (<https://www.printedelectronicsarena.com/>) at Norrköping, Sweden, digital printing (inkjet and aerosoljet) captured huge attention in recent decade owing to its non-contact, drop-on-demand fabrication ability; compatibility with a broad range of substrates and functional materials (inks); resolution down to 10  $\mu\text{m}$ ; minimal ink consumption and suitability for a wide range of production scales, from prototyping to large-scale industrial production. In this presentation, I will cover our digital printing activities to fabricate printed devices like, sensors, transistors, batteries and antennas.