

CHIP-IN-FLEX



FIRST FULLY FLEXIBLE LABEL INCORPORATING AN RFID CHIP AND SENSORS

+ WHAT IS CHIP-IN-FLEX?

Chip-In-Flex is CEA-Leti's latest development towards the integration of ultra-thin, bare silicon chips within a flexible film. Today, electronic systems are becoming smaller, thinner and, above all, flexible. Flexibility makes possible new functions and hence new usages. With Chip-In-Flex, CEA-Leti is introducing a new paradigm for integrating ultra-thin, bare chips into a flexible label made on a silicon wafer.

+ APPLICATIONS

The flexible label easily interfaces with an interconnection system printed directly on the object or on a larger flexible substrate. Curved surfaces, such as a dashboard, a steering wheel, piloting or driving controls, a smartphone shell, etc., can therefore be functionalized. Integration of electronic systems applied to fabrics or personal patches for medical or well-being applications is also envisaged.

+ WHAT'S NEW?

Fabricated at CEA-Leti, this demonstrator leverages an RFID chip featuring temperature and stress sensors, all integrated into an ultra-thin, flexible label developed by the Institute. The latter is applied to a flexible substrate featuring an antenna leveraging low-cost printing technologies developed by CEA-Liten. An RFID testing system enabled successful validation of the demonstrator's functionality.

RFID (Radio Frequency identification) test device, used to store and retrieve data remotely ↓

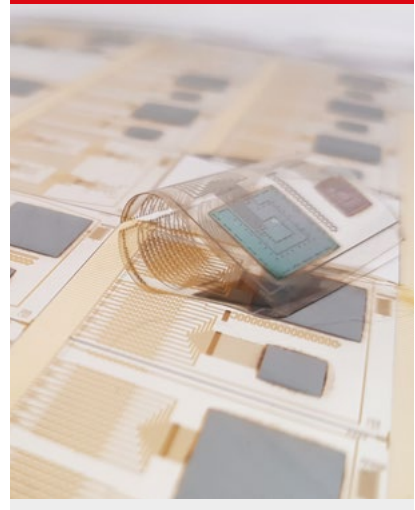


+ WHAT'S NEXT?

CEA-Leti's team is continuing to improve the integration process and produce ever smaller, higher performance labels.

PUBLICATIONS

- J.-C. Souriau et al., 69th Electronic Components and Technology Conference (ECTC), 2019
- J.-C. Souriau et al. ChipScaleReview, September-October; Volume 23, Number 5



INTERESTED IN THIS TECHNOLOGY?

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