

# CHIP IN FLEX

## WAFER LEVEL INTEGRATION OF THIN SILICON BARE DIES WITHIN FLEXIBLE LABEL

### + WHAT IS CHIP IN FLEX?

ChipInFlex is CEA-Leti's latest development towards the integration of ultra-thin silicon bare dies within a flexible film. Nowadays, devices are both ultra-thin and flexible, which allows the introduction of an additional function around objects. With ChipInFlex, CEA-Leti introduces a new paradigm for the integration of ultra-thin silicon bare dies within a flexible label made on wafer carrier.

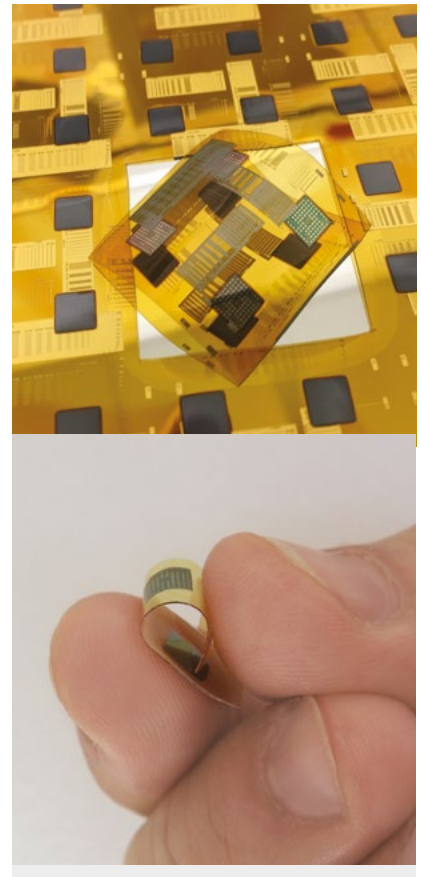
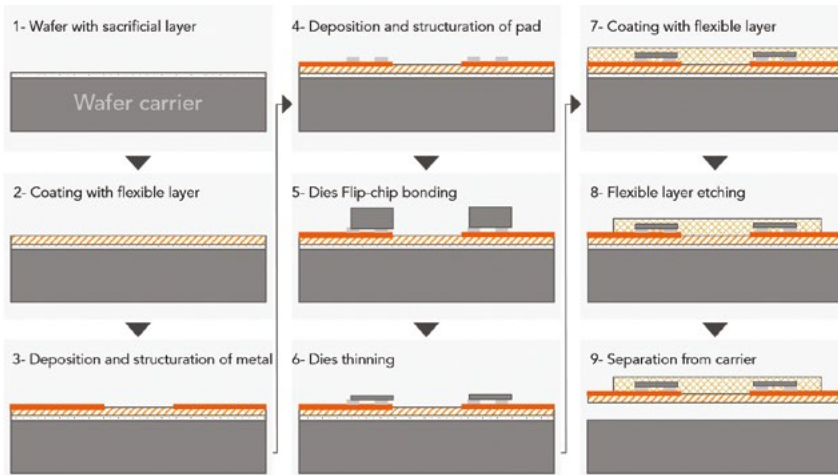
### + APPLICATIONS

Working with silicon wafers help achieve high resolution of integration. Silicon wafers are well-suited for flexible fan-out packaging. It help builds an heterogeneous flexible system which combines panel substrate—including printed device and interconnection network—with a silicon electronic die integrated within a small flexible label.

## + WHAT'S NEW?

ChipInFlex is a generic wafer level process for manufacturing a flexible label, which integrates silicon components. CEA-Leti's packaging team is the first to offer flip-chip silicon dies interconnection within a flexible film.

ChipInFlex is also the first packaging solution that can perform collective thinning on the wafer. The electrical interconnection is achieved with gold stud-bumps made on bare dies. The ChipInFlex process has been successfully validated on an electrical test vehicle. A first step towards full electronic system in a flexible label has been made.



## + WHAT'S NEXT?

CEA-Leti's packaging team is currently developing a demonstrator, with application ranging from sensors to RFID dies.

## INTERESTED IN THIS TECHNOLOGY?

Contact:

**Jean-Charles Souriau**

[jean-charles.souriau@cea.fr](mailto:jean-charles.souriau@cea.fr)

+33 438 789 813

Leti, technology research institute

Commissariat à l'énergie atomique et aux énergies alternatives  
Minatec Campus | 17 avenue des Martyrs | 38054 Grenoble Cedex 9 | France

[www.leti-cea.com](http://www.leti-cea.com)



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