

CASE STUDY

22.05.2025

QUESTIONS

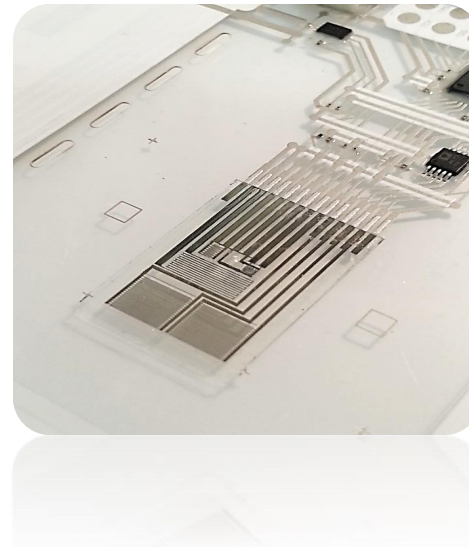
Dr. Danick Briand

FlexSmell – European project (FP7)

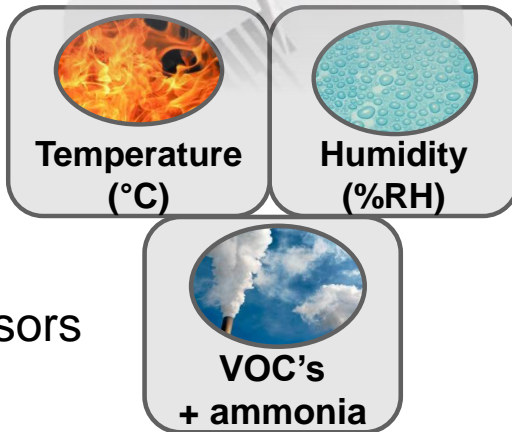
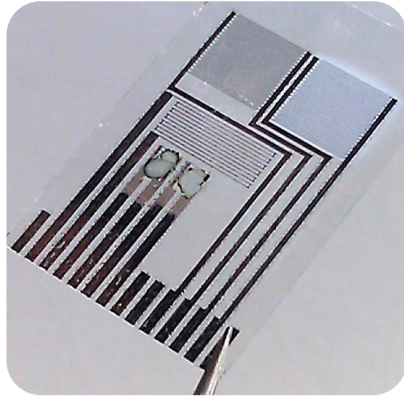
“Gas Sensors on Flexible Substrates for Wireless Applications”

Goal: To develop RFID tags for traceability and monitoring of perishable goods during the transportation chain (smart packaging)

- Printed chemical sensors
- Flexible substrate
- Wireless communication

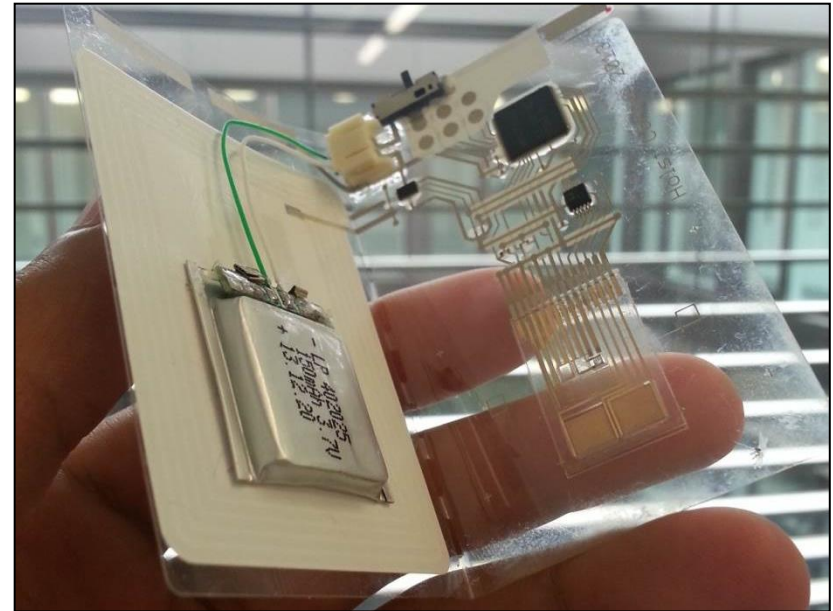


Multi-sensing platform

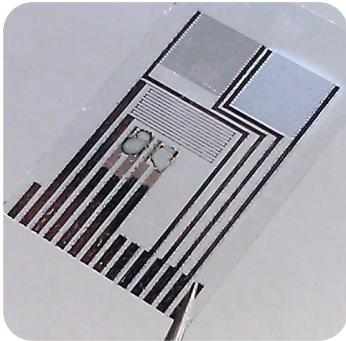


4 sensors

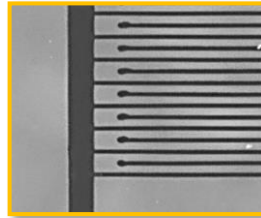
Smart label



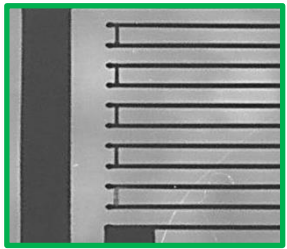
Smart sensing platform: Transducers view



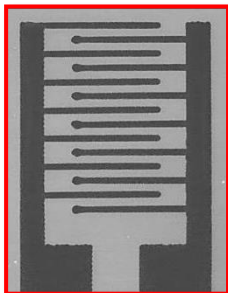
Sensor 1



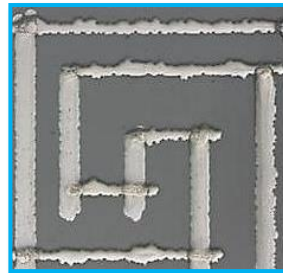
Sensor 2



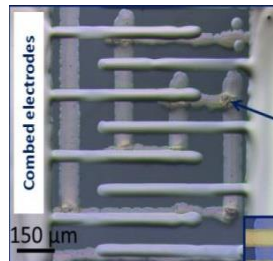
Sensor 3



Sensor 4

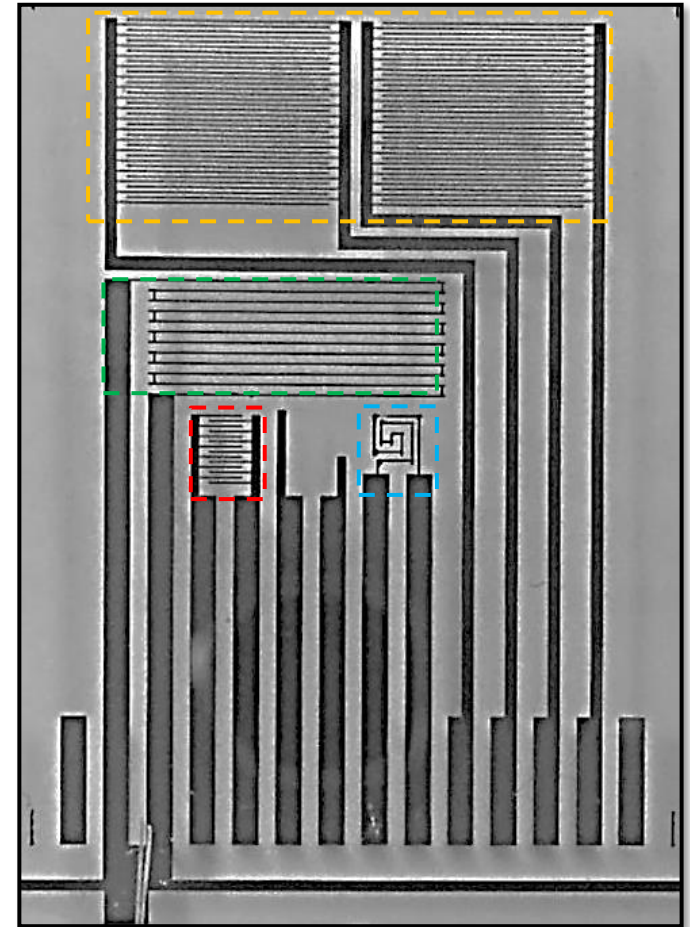


1st level

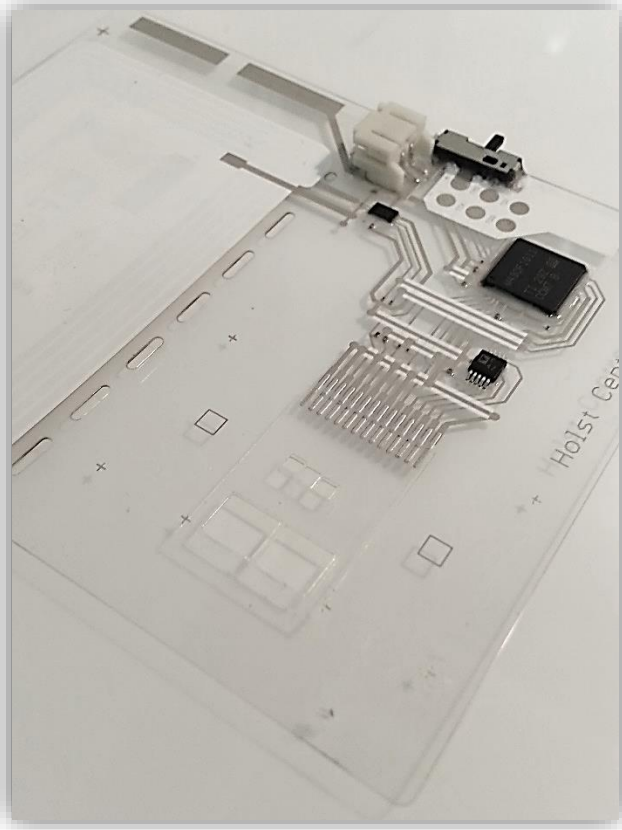


1st + 2nd levels

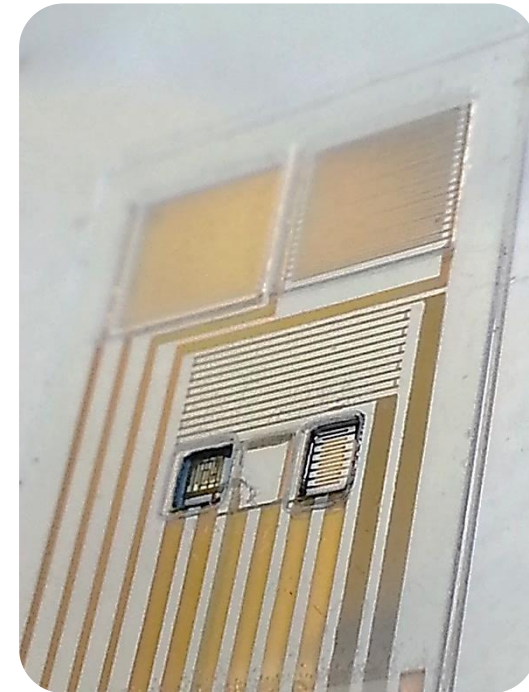
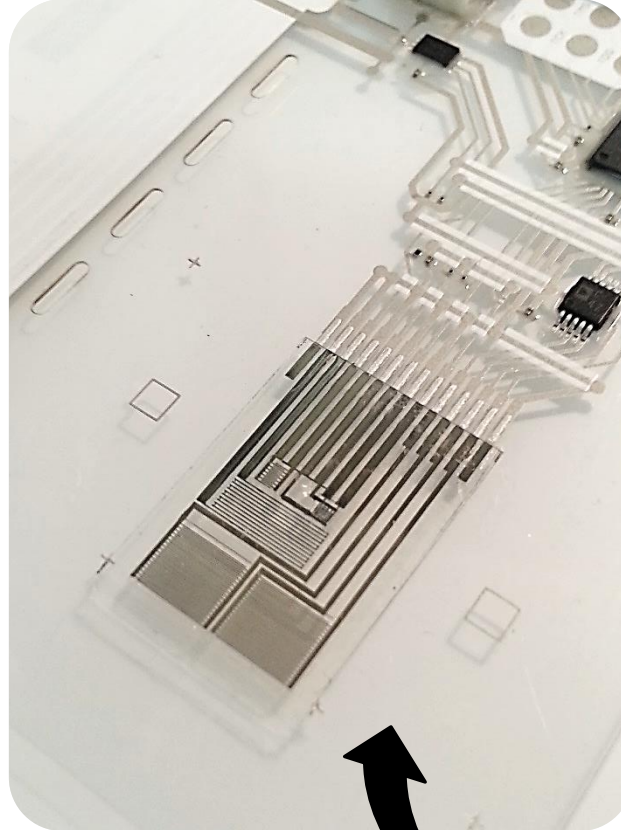
Image of first transducer level



Integration

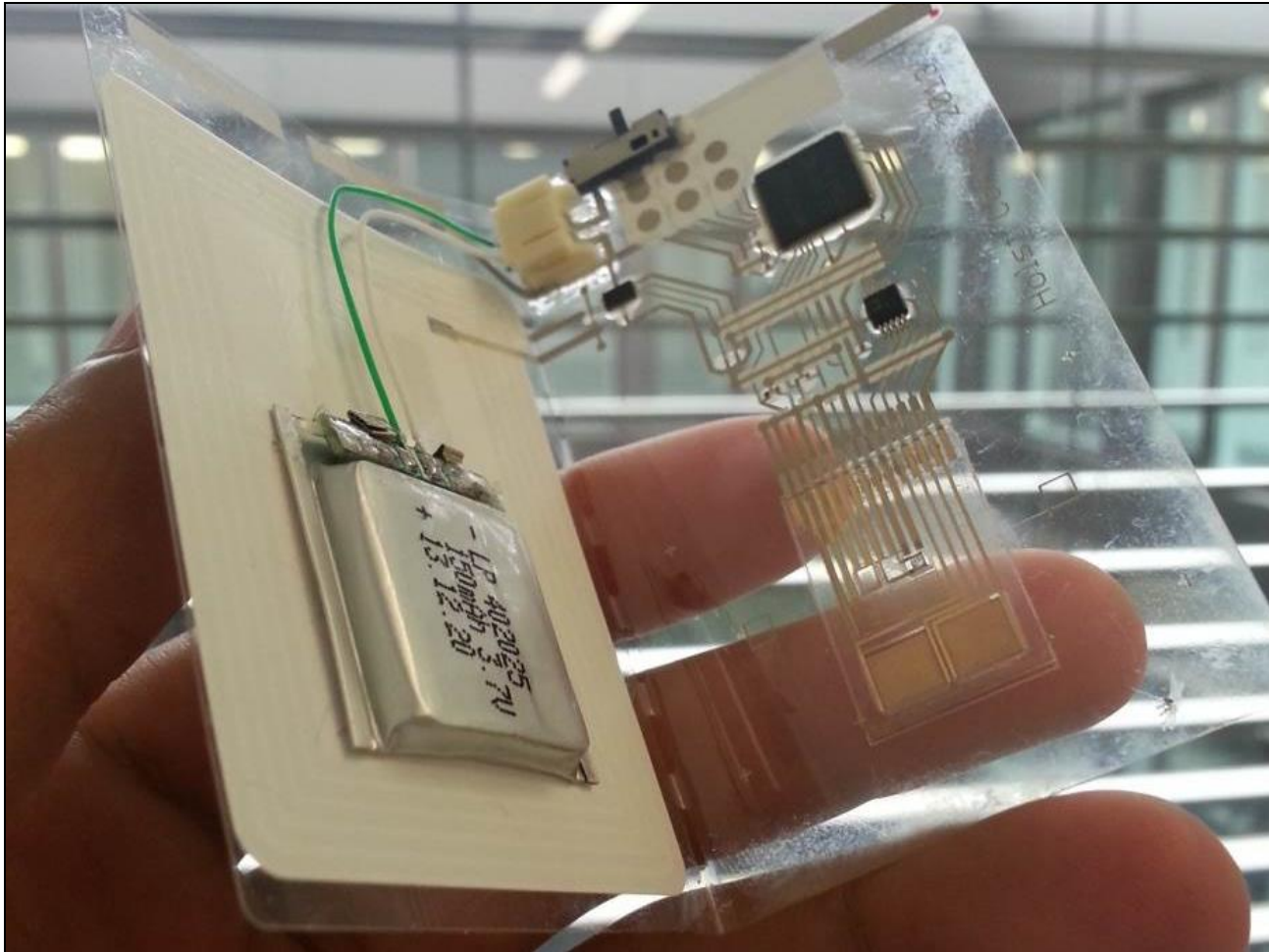


RFID PCB foil

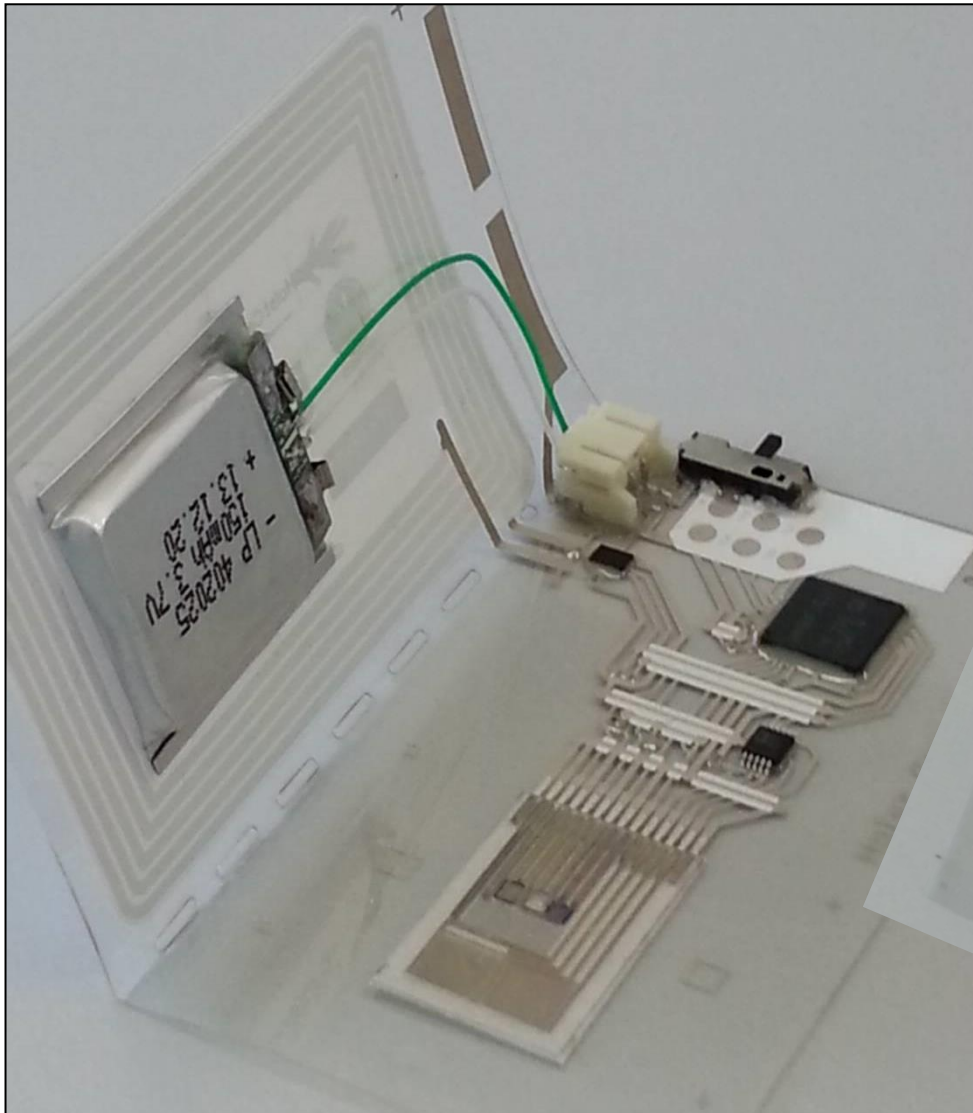


Sensing platform

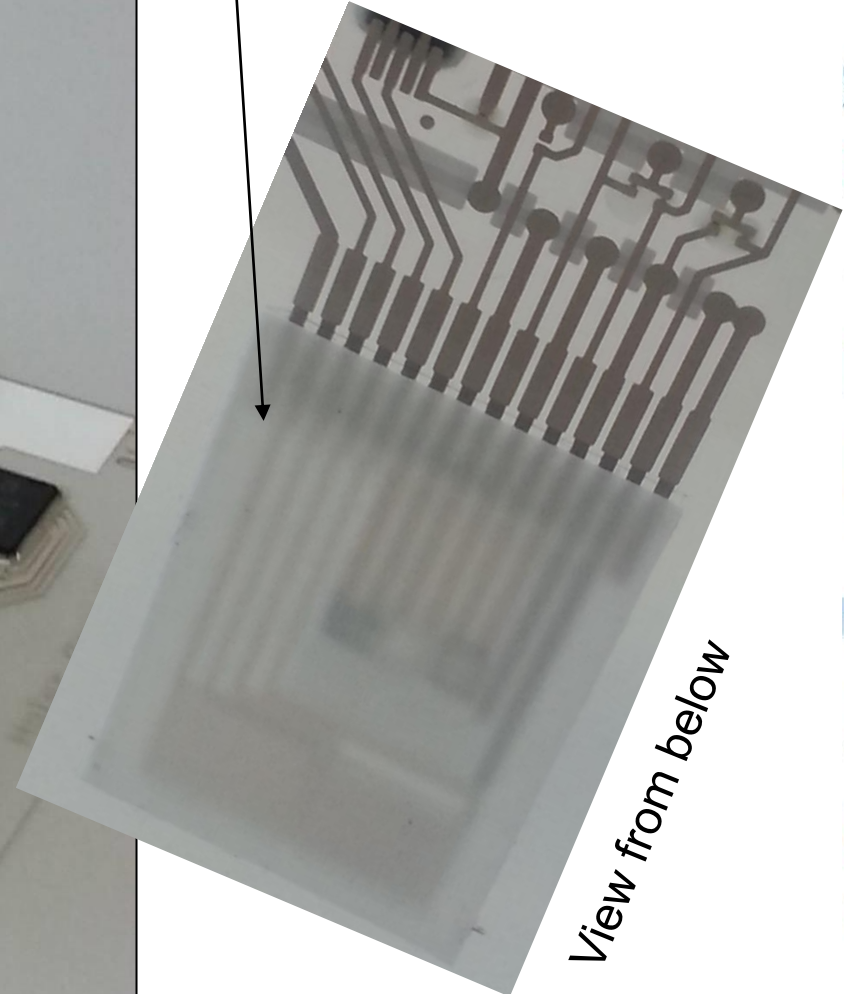
Smart sensing label



Smart sensing label



With sensing foil encapsulation
using gas permeable membrane (whitish)



View from below

Questions

- Identify the different components on the sensing platform
- Propose a process to fabricate the sensing platform
 - Substrate
 - Printing techniques and materials
- Identify the different components on the RFID label
- Propose a process to fabricate the RFID label
 - Substrate
 - Printing techniques and materials
- Propose a process for the assembly of the RFID label and sensing platform
 - Materials and methods for the assembly
 - For the encapsulation of the sensing platform
- Why the system is made of the assembly of two parts ?
 - How could be the process simplified and cost lowered ?