

ORGANIC AND PRINTED ELECTRONICS

CASE STUDY

22.05.2025

QUESTIONS

Dr. Danick Briand

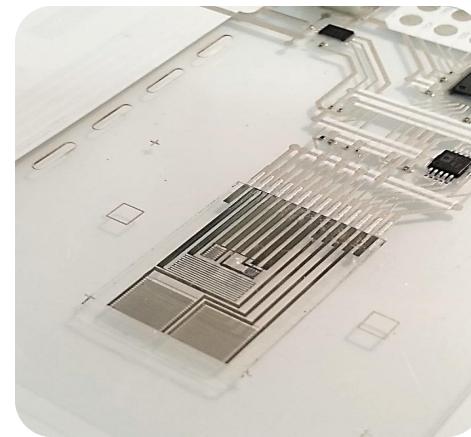
FlexSmell – European project (FP7)



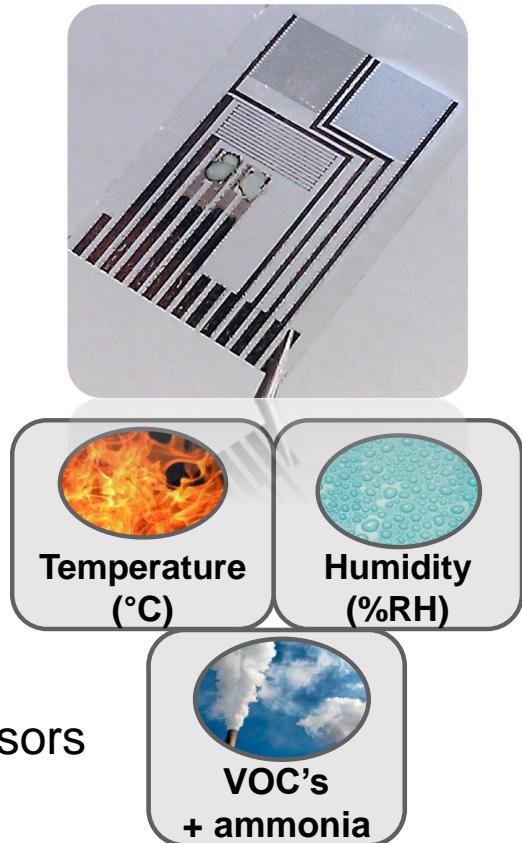
“Gas Sensors on Flexible Substrates for Wireless Applications”

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

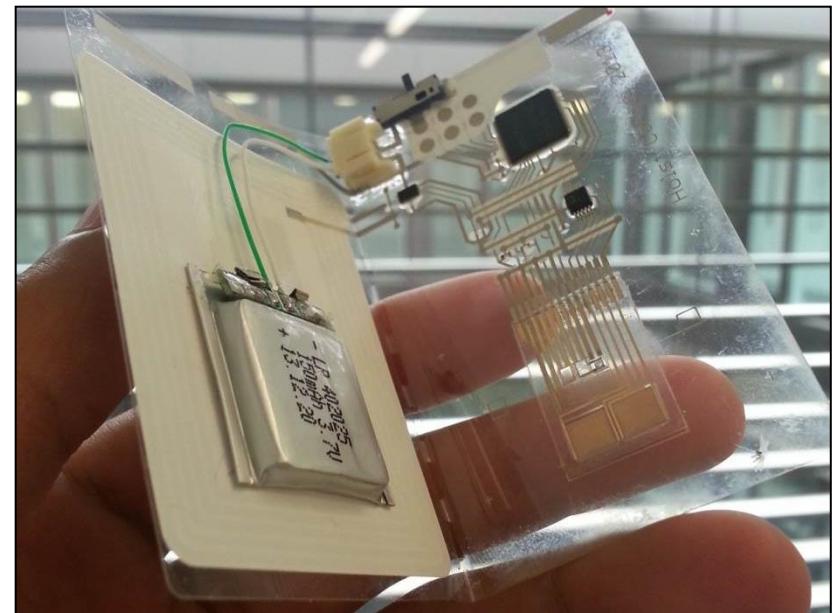
- Printed chemical sensors
- Flexible substrate
- Wireless communication



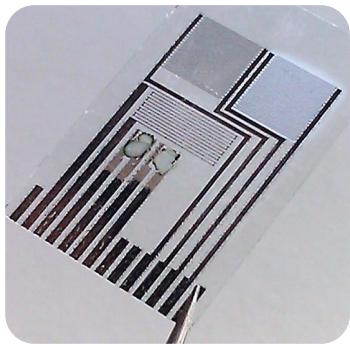
Multi-sensing platform



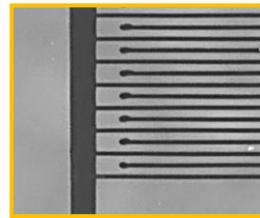
Smart label



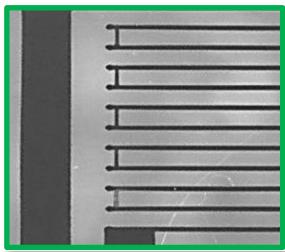
Smart sensing platform: Transducers view



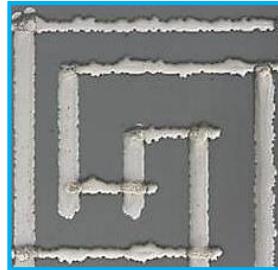
Sensor 1



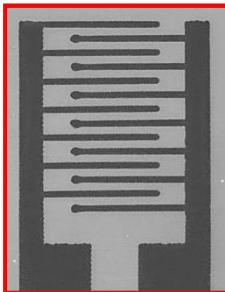
Sensor 2



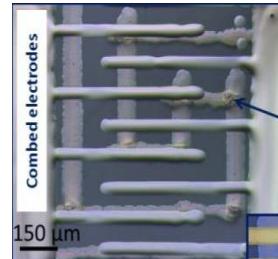
Sensor 4



Sensor 3

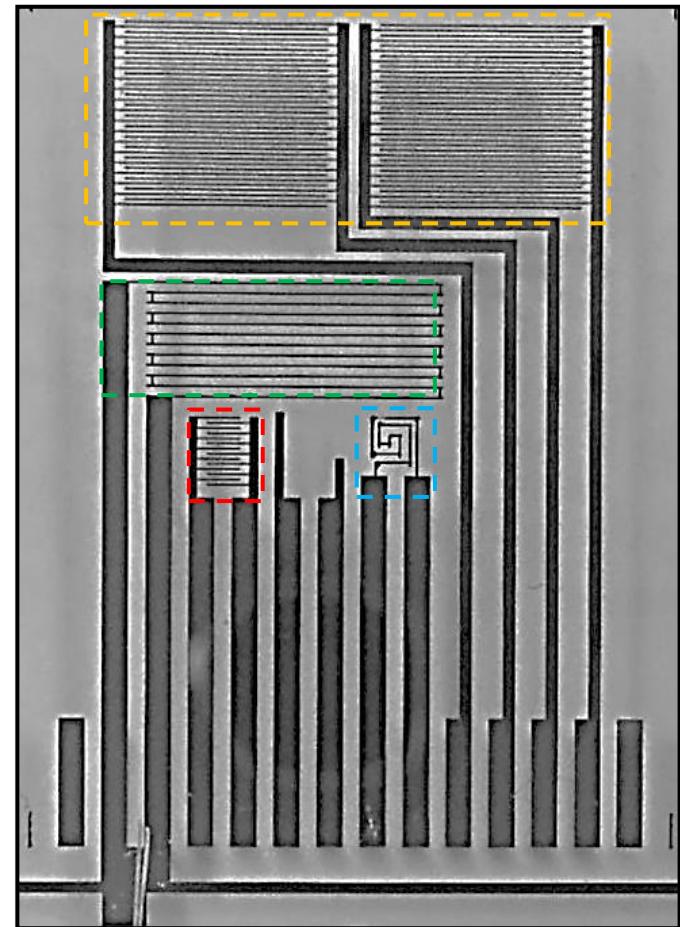


1st level

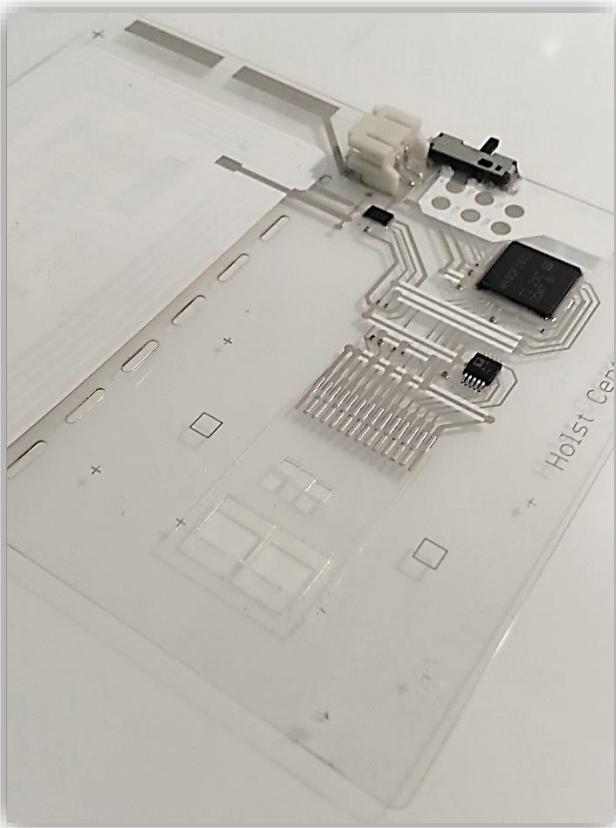


1st + 2nd levels

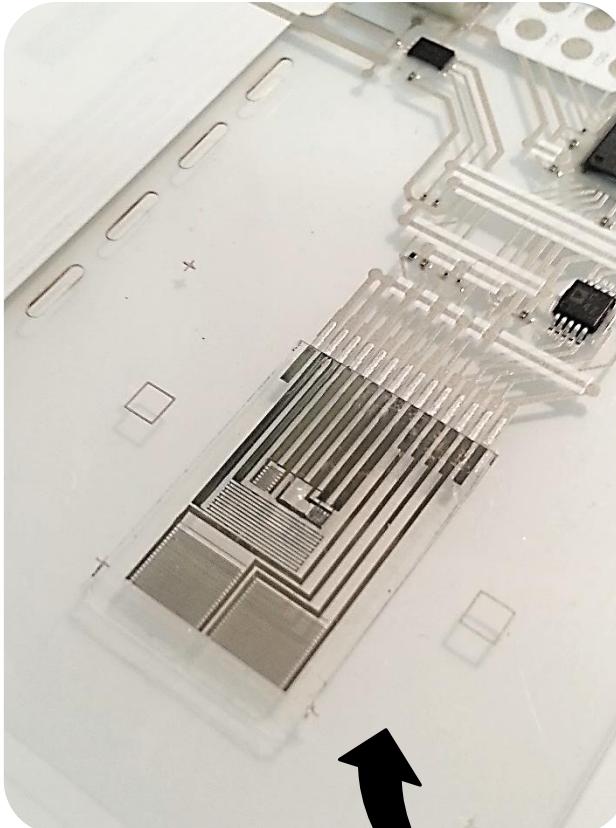
Image of first transducer level



Integration

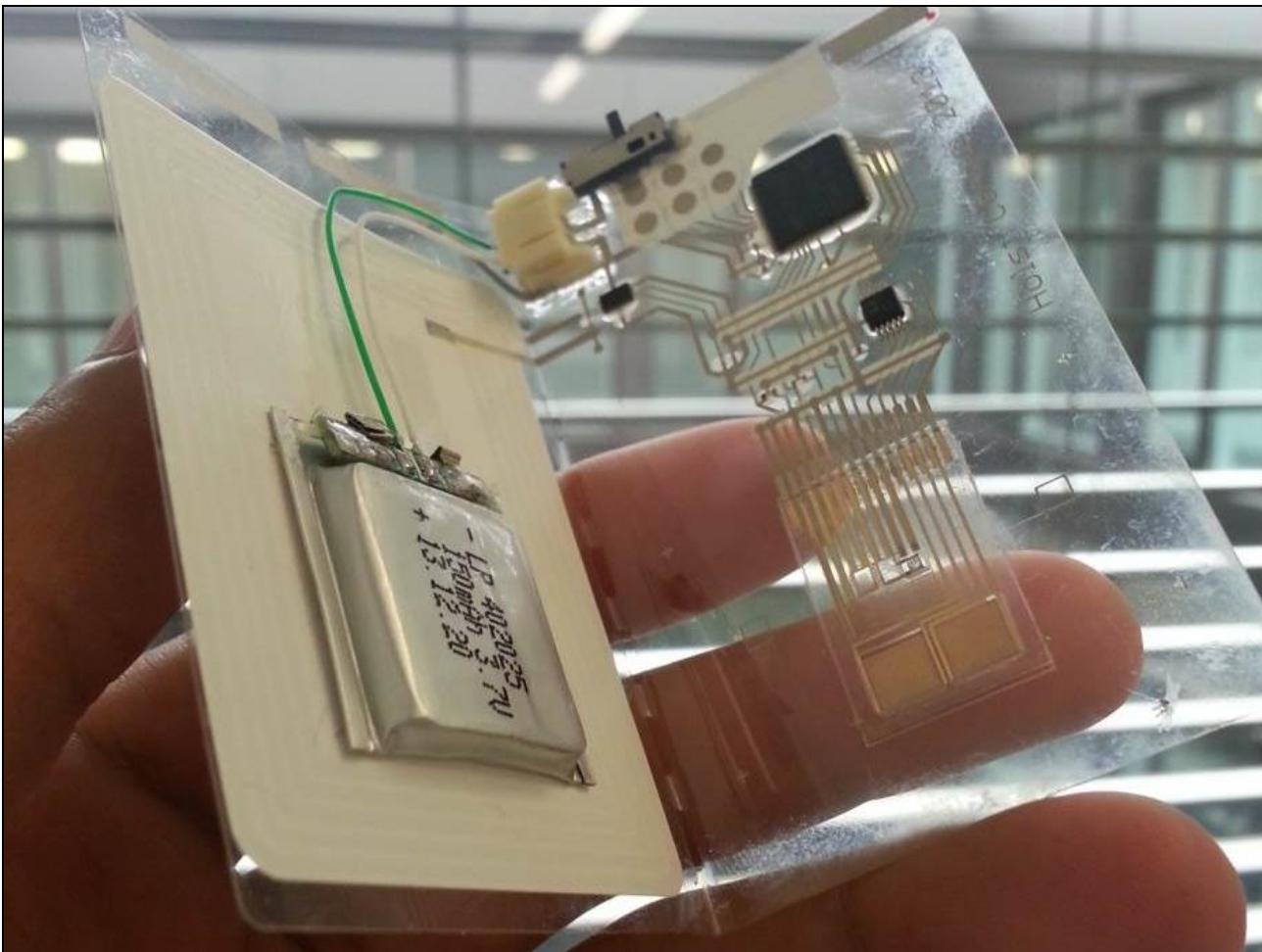


RFID PCB foil

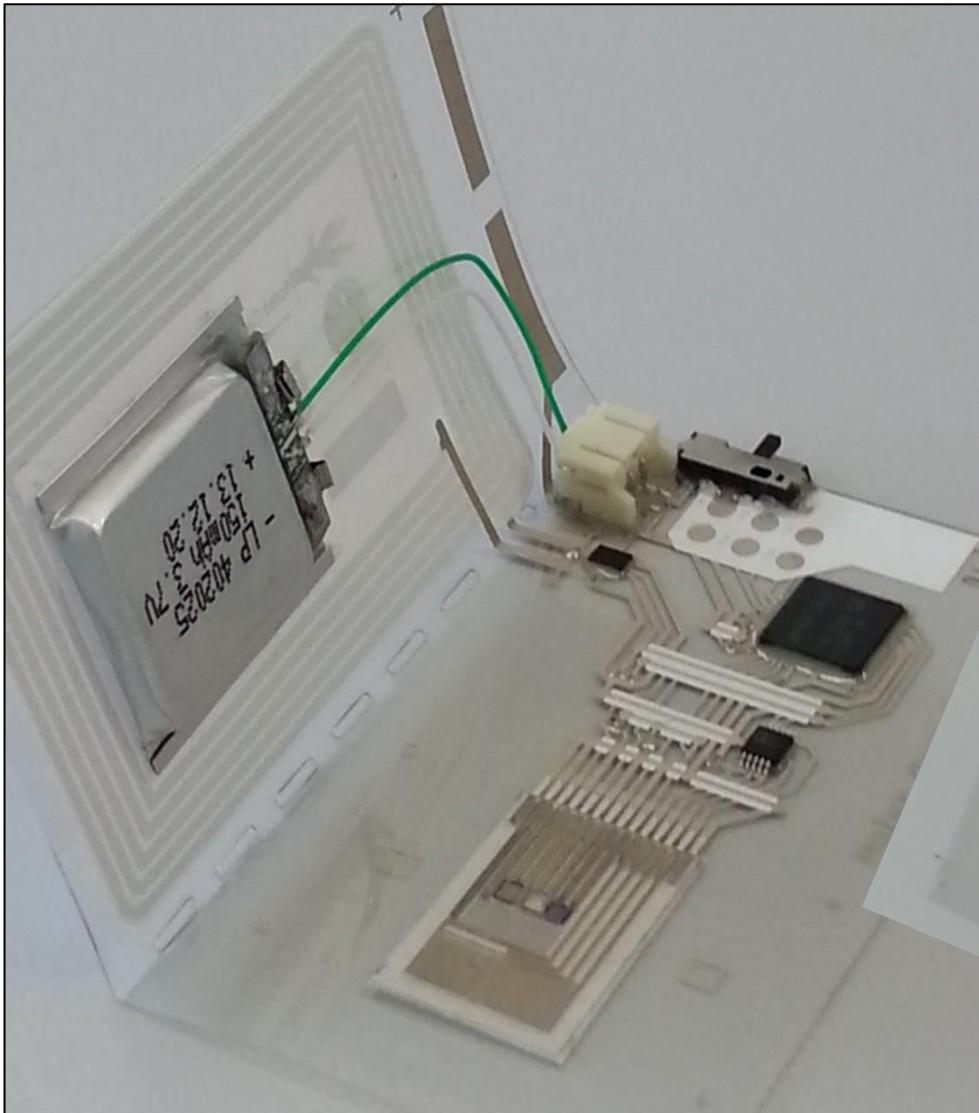


Sensing platform

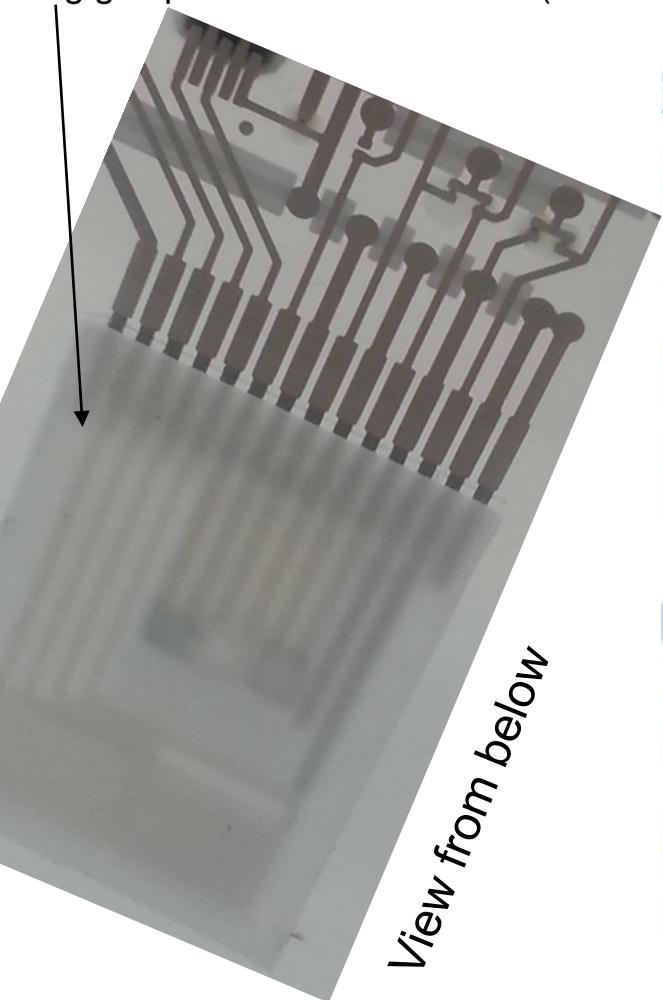
Smart sensing label



Smart sensing label



With sensing foil encapsulation
using gas permeable membrane (whitish)



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 ?