

**Workshop On**
  
**Low-cost sensors and Microsystems for environment monitoring**
  
 Hotel Mercure Compans, Toulouse, France
   
**May 20<sup>th</sup>-21<sup>st</sup>, 2019**

**Final Program**

**Monday, May 20<sup>th</sup>**

**08h45-09h30: Welcome of participants**

- 9h30-10h15: Introductions
  - General information (*Lionel PRESMANES, Philippe MENINI and Christophe PIJOLAT (CMC2)*)
  - CIRIMAT presentation (*Christophe LAURENT*)
  - LAAS-CNRS presentation (*Pierre TEMPLE BOYER*)
  - NanoSen-AQM project presentation (*Esther HONTANON*)

<b>10h15-11h00: KEYNOTE</b> Chairman : Christophe PIJOLAT		
<b>10h15</b>	<i>Laurent SPINELLE</i> Ineris, Verneuil-en-Halatte, France	“Sensors and air quality: an assessment of what can we expect today from low-cost sensors”

<b>11h00-12h40 (Session 1) : Innovative Materials</b> Chairman : Esther HONTANON		
<b>11h00</b>	<i>Eduard LLOBET</i> Univ. Rovira i Virgili, Tarragona, Spain	<b>I1.1:</b> “2D nanomaterials beyond graphene: opportunities and challenges for selective gas sensing”
<b>11h40</b>	<i>Sandrine BERNARDINI</i> Aix-Marseille Univ.-IM2NP, Marseille, France	<b>O1.2:</b> “ZnO-SnO2 Nanoheterostructures : Microwave synthesis and UV-enhanced gas sensing properties”
<b>12h00</b>	<i>Martin DROBEK</i> Univ. Montpellier, Montpellier, France	<b>O1.3:</b> “Design and fabrication of gas sensors based on Metal Organic Framework membrane encapsulated ZnO nanowires”
<b>12h20</b>	<i>Seydou OUEDRAOGO</i> ICMUB-Univ. de Bourgogne, Dijon, France	<b>O1.4:</b> “Phthalocyanine-based ambipolar heterojunctions for ammonia sensing”

## 12h45-14h15: Lunch

14h20-16h20 (Session 2): Micro-Nano Sensors - New Trends on sensors		
Chairman : H��l��ne DEBEDA		
14h20	<i>Yvan ROMANYTSIA</i> Rubix, Toulouse, France	<b>I2.1:</b> "Sensors selectivity versus sensors orthogonality : The human being as the ultimate example of sensors fusion"
15h00	<i>Jean Paul VIRICELLE</i> Mines St Etienne, Saint Etienne, France	<b>O2.2:</b> "Fabrication of SnO <sub>2</sub> flexible sensor by inkjet printing technology"
15h20	<i>Dikai NIU</i> Inst. Fresnel, Marseille, France	<b>O2.3:</b> "Optimized all-dielectric interference coatings for sensing applications"
15h40	<i>Fatima-Ezzahraa DBIBIH</i> Inst. Femto-ST, Besan��on, France	<b>O2.4:</b> "Innovative impaction plate for cascade impactor with autonomous cleaning"
16h00	<i>Marc RESPAUD</i> INSA, Toulouse, France	<b>O2.5:</b> "A pedagogical approach for the design and manufacture of a smart chemical sensor/Micro and Nanofabrication techniques at AIME"

## 16h20-17h20: Coffee Break and Poster Session (P1)

17h20-19h00 (Session 3): Communicant & Embedded Microsensors		
Chairman : Marcel BOUVET		
17h20	<i>Giorgio SBERVEGLIERI</i> Nano sensor systems srl, Brescia, Italy	<b>I3.1:</b> "Nano MOX chemical sensors applied to agri-food field"
18h00	<i>Jesus LOZANO ROGADO</i> Univ. de Extremadura, Badajoz, Spain	<b>O3.2:</b> "Electronic nose with digital sensors for pollutants detection"
18h20	<i>Eduardo PINILLA-GIL</i> Univ. de Extremadura, Badajoz, Spain	<b>O3.3:</b> "Low-cost voltammetric detection systems on screen-printed electrodes for air pollution monitoring"
18h40	<i>Fr��d��ric HAMMEL</i> Ethera, Crolles, France	<b>O3.4:</b> "Miniaturization and performance's improvement of a formaldehyde sensor for indoor air quality monitoring"

## 20h30: Gala Dinner (Brasserie du Capoul, Place Wilson, Toulouse)

## Tuesday, May 21<sup>st</sup>

8h30-10h10 (Session 4): Chemical Sensors for water monitoring		
Chairman : Jean-Paul VIRICELLE		
8h30	<i>Minh Huy DO</i> LCA INP-Ensiacet, Toulouse, France	<b>O4.1:</b> "Optical sensor for the detection of glyphosate using surface plasmon resonance and molecular imprinting technique"
8h50	<i>Jérôme LAUNAY</i> LAAS-CNRS, Toulouse, France	<b>O4.2:</b> "Development of a lab-on-chip platform integrating electrochemical and optical microsensors for the detection of water contaminants based on algal physiology monitoring"
9h10	<i>Anis TALEB BENDIAB</i> IRSTEA, Montpellier, France	<b>O4.3:</b> "Optical sensor for droplet characterization : toward agricultural spraying deposits measurement tool"
9h30	<i>Philippe NAMOUR</i> IRSTEA, Villeurbanne, France	<b>O4.4:</b> "Design and field-test of an operational low-cost and open-source system for river water quality monitoring"
9h50	<i>Vincent RAIMBAULT</i> LAAS-CNRS, Toulouse, France	<b>O4.5:</b> "Low cost in situ chlorophyll a fluorometer for marine and fresh waters"

### 10h10-11h20: Coffee Break and Poster Session (P2)

11h20-13h10 (Session 5): Calibration, Cross sensitivity, Field measurement (1)		
Chairman : Khalifa AGUIR		
11h20	<i>Laurent SPINELLE</i> Ineris, Verneuil-en-Halatte, France	<b>O5.1:</b> "First French Intercomparison Exercises for Air Quality sensors (EA $\mu$ C): results and assessment"
12h00	<i>Miguel ESCRIBANO</i> Kunak, Noáin, Spain	<b>O5.2:</b> "Raise awareness for health effects of air pollution among athletes and recreational runners"
12h20	<i>Noémie CAILLOL</i> Axel'One, Solaize, France	<b>O5.3:</b> "Metrology of fiber coupled optical sensors: feedback on industrial needs and instrument comparison"
12h40	<i>Leonardo SANTIAGO</i> Bettair, Barcelona, Spain	<b>O5.4:</b> "Achieving high accuracy air quality measurements with Bettair <sup>®</sup> static monitors"

### 13h10-14h40: Lunch

14h30-15h50 (Session 6): Calibration, Cross sensitivity, Field measurement (2)

Chairman : Edouardo PINILLIA GIL

<b>14h40</b>	<i>Adrian ARFIRE</i> Airparif, Paris, France	<b>I6.1:</b> "A Holistic Approach to Low-Cost Air Quality Sensor Evaluation: The AIRLAB Microsensors Challenge"
<b>15h20</b>	<i>Alexandre FAVARD</i> EcoLogicSense, Rousset, France	<b>O6.2:</b> "Citizen sensor: from concerns to solutions"
<b>15h40</b>	<i>Luis GARCIA</i> Envira, Llanera, Spain	<b>O6.3:</b> "Nanoenvi. Envira's experience with low cost air quality sensors"

- 16h00 – Conclusions (L. Presmanes/Ph. Menini/E. Hontanon/Ch. Pijolat)
- 16h10 – End of workshop