#### **REGISTRATION FORM**

Name :
Company :
Address :
Tel :
Fax :
e-mail :

wants to register as (includes lunch and coffee) :

IMAPS member (Benelux or international) membership nr #	90 EUR
Non member workshop fee includes 2015 membership fee	160 EUR
Student fee	30 EUR

I prefer :

to pay cash at the registration desk (no checks or credit cards please)

 $\hfill\square$  to receive an invoice

Registrations should be made before November 18, 2014. Cancellations after November 18 will not be refunded. After registration, you will receive a confirmation and driving directions.

□ I am interested in a table for the table-top exhibition

□ I need transport from the leper railway station to Melexis

Please fax (or send) this registration form to:

Katrien Vanneste, ELIS-CMST, Gent University Technologiepark 914A, B-9052 Zwijnaarde Tel: +32 (0) 9 264 5350 FAX: +32 (0) 9 264 5374 E-mail : <u>katrien.vanneste@ugent.be</u> IMAPS - BENELUX

Afzender: IMAPS-Benelux p/a Katrien Vanneste ELIS-CMST Technologiepark 914A B-9052 Zwijnaarde



### Packaging for sensors

Thursday, 20 November 2014

Venue :

Melexis Rozendaalstraat 12, 8900 leper (B)

www.imapsbenelux.eu

### PROGRAM

#### 9.30 Registration, coffee, exhibition

### 9.55 Welcome by the chairman

Appo van der Wiel, Melexis, BE

#### **10.00** Package functional part of a sensor system

Ignas van Dommelen, Sencio, NL

The background of standard assembly is dual : protection of the sensitive silicon chip against the environment, and getting access to the electrical hart of the silicon chip. The complete functionality of the devices is available within the silicon chip and packaging is 'only' a cost adder, a cost adder that (unlike the transistor) unfortunately is not following Moore's law.

For sensors and sensor system the packaging has an additional functional contribution. Besides protection and electrical access it must allow that the medium & characteristics to be measured gets access to the sensor surface. On top of that it must be assured that the accuracy and sensitivity of the sensor is not influenced by the assembly.

### **10.30** Low temperature processing as a key enabler for sensors and microfluidic systems assembly

Serguei Stoukatch, University of Liege, B

Unlike a CMOS die, most sensors may not be assembled by conventional assembly methods that require exposure to elevated temperatures. For example, die attach, wire-bonding and encapsulation are performed at 150°C and above. In response to such requirements, Microsys developed an assembly sequence that requires no elevated temperatures. The assembly sequence has been successfully used for assembling a biosensor for Influenza detection, a hydrogen detector, a breathing sensor in textile and for a microfluidic channel.

#### 11.00 Coffee, exhibition

# 11.30 Energy dispersive detection module for X-rays in a CT scanner

Co Van Veen, Philips Research, NL

A study was undertaken into the possibility of building a dual layer energy CT tile with the purpose of taking advantage of the polychromatic nature of the X-ray spectrum to better discriminate tissue and to potentially decrease X-ray dose. The approach has been to develop a detector pixel consisting of two superimposed scintillators, whereby the upper one absorbs the low energy part of the X-ray spectrum and the lower one absorbs the remainder.

#### 12.00 Packaging Automotive Integrated Current Sensor

#### Jian Chen, Melexis, BE

For medium and large volume applications in industry and automotive sector electrical currents are either measured by resistive shunts, current transformers or by magnetic sensors. Although shunts are widely used due to low component price, magnetic sensors bear significant advantages on the system level.

Conventional magnetic current sensors are calibrated by the magnetic field, not by current, which result in bad accuracy. Thanks to the Melexis newly developed packaging technology, Melexis is able to offer on the market an integrated current sensor with integrated current path to enable the sensor calibration on electrical currents. On the other hand, we are also facing new challenges like high voltage isolation, self heating, etc. which will be addressed in this presentation.

#### 12.30 Lunch, exhibition

#### Melexis Ieper plant company tour

### 14.00 Encapsulation of Sensor Devices, now and in the future

#### Huub Claassen, Towa Europe, NL

For semiconductor packaging the transfer molding technology has been in use since the early seventies. In the early eighties the first fully automatic transfer molding system was developed and until the end of last century, transfer molding was the only technology, used for encapsulation of a wide variety of electronic devices.

Transfer molding is a well proven technology for sensor packages. Today TOWA's compression molding expands molding capabilities further to meet the challenges of todays and future sensor devices.

In this presentation we would like to give you an overview of both technologies and how they meet the application requirements.

TOWA is a leading supplier of modular manufacturing equipment, using transfer molding and compression molding techniques, thus capable of packaging any type of device.

## 14.30 The use of modeling in MEMS packaging development

Xavier Rottenberg (to be confirmed), imec, BE

Abstract not available at the time of printing

#### 15.00 Coffee, exhibition

### **15.20** Packaging of Infra red sensors for automatic doors *Michel Peters, BEA, BE*

BEA will describe the BEA Chip On Board flow chart.

We will describe the influence of the material, the cleaning, the use of die and wire bonder, the coating and test of the process.

We will share our experience on the COB process implementation in BEA applications.

#### 15.50 Closing drink