MICRO PRINCE

Newsletter - November 2019, Issue 5

MICROPRINCE
Pilot Line for Micro-Transfer-Printing of Functional Components on Wafer Level

Message from the Coordinator

Since the previous edition of the newsletter, quite a lot has happened in the **MICROPRINCE** project. The development of the Cu-RDL process is ongoing, target wafers target wafers for InP test prints were created, demonstrator devices were populated with GaN LEDs and a reliability study on GaAs-based current sensors was prepared.
The **review meeting** allowed important discussions for the future work until the end of the project. The review meeting was followed by a **technical meeting** where partners had the chance to align their efforts.
After the second project year, partners are dedicated to their tasks and to finalize their work within the remaining time.

In this Issue

Technical Meeting in Halle (Saale)

From 9th to 10th October, the **MICROPRINCE** consortium had the opportunity to come together again, by attending a **technical meeting** in Halle (Saale), Germany, at Fraunhofer premises.

Technical progress and difficulties were discussed and mitigation measures were equally further defined and implemented, in order to allow the project to continue smoothly. The meeting was concluded by a tour through the research labs of Fraunhofer. All partners had the chance to socialize at the common dinner on Day 1 at the historic town centre of Halle (Saale).

The meeting was concluded by a shared lunch on Day 2 at Fraunhofer. Partners left the meeting with clear to-do's and guidelines for the upcoming period.

Review Meeting in Brussels

The **MICROPRINCE** partners met on 9th July 2019 to prepare for the 2nd **review meeting** and align presentations. Afterwards, preparations and discussions continued during the common dinner in a less formal atmosphere. The second day, 10th July, was dedicated to the review meeting.

The achievements of the 2nd project period were presented and the reviewers showed great interest in the work of the consortium. Important discussions and recommendations were raised by the reviewers. Overall it was a productive and engaging meeting and the consortium is looking forward to upcoming tasks.

Key Data:

Project number:	**737465**
Project website:	www.microprince.eu
Project start:	1st April, 2017
Project duration:	3 years
Total costs:	EUR 14.017.817,61
EC funding:	EUR 3.340.035,74

Consortium: 13 partners (4 countries)
Project Coordinator: **Dr. Sebastian Wicht**
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MICRO-Transfer-Printing of Functional Components on Wafer Level Pilot Line for Micro-Transfer-Printing of Functional Components on Wafer Level

Technical progress since the last newsletter

- Within the **µ-Transfer Printing Pilot line**, the focus is currently on the development of the Cu-RDL process. In addition, baseline etch recipes for patterning the BCB adhesion layer were investigated and developed. Together with X-CEL, specific business cases for transfer printing were investigated. Moreover, array printing experiments with Hall Plate dummy structures, optical filters, GaN LEDs and InP photodiodes were performed and are partially still ongoing.
- As far as **Transfer printing for high sensitivity magnetic sensors** is concerned, there were redesigned and manufactured target wafers created together with XMF. Further, the reliability study for the packaged samples produced in the first cycle was prepared.
- Micro-transfer-printing for optical sensors achieved a major success: A full specified and developed process plus released filters for **µTP filters onto CMOS wafers is available.** This includes the source wafer production for SiN deposition, filter deposition and patterning. After another SiN deposition and release etch, the filter chiplets were printed on functional optical sensors at XMF and first characterization results of these heterogeneously integrated sensors were obtained by XFAB.
- Concerning the **micro-transfer-printing of LED devices**, the package for characterization as well as for possible production was defined and engineering LEDs were printed meanwhile on the driver IC targets. The preparation and definition of all steps towards the demonstrator are finalized and the characterization of SoC defined and prepared.
- Within the **micro-transfer-printing for biomedical implant applications**, a process with SiN tether has been developed for InP-based LED/PDs.

Past Dissemination Events

- XMF attended the "EFECS 2019" from 19th-21st November 2019 in Helsinki, Finland.
- X-FAB gave a presentation on the impact of funded projects at the "ESSDERC/ESSCIRC" conference from 23rd-26th September 2019 in Krakow, Poland.
- TU Dresden gave a poster presentation at the "OUTPUT.DD 2019" on 20th June 2019 in Dresden, Germany.
- XMF and TU Dresden attended the "ADTC—European Nanoelectronics Applications, Design & Technology Conference" on 14th-16th May 2019 in Dresden, Germany.

Upcoming Dissemination Events

- Partners XMF, IMEC and X-CEL plan to attend the "WaferBond Conference 2019" from 2nd-4th December 2019 in Halle (Saale), Germany. They will be represented by presentations & proceedings papers for a short µTP session at the conference.

For more detailed information about and around the project we warmly invite you to have a look at our **project website**, which is constantly kept up-to-date with the latest project related news: www.microprince.eu. Furthermore, please feel free to follow the project on Twitter: https://twitter.com/MicroprinceEU

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