

FAB2ASM

Efficient and Precise 3D Integration of Heterogeneous Microsystems from Fabrication to Assembly

Speaker : Dr. Krisztina Cziner



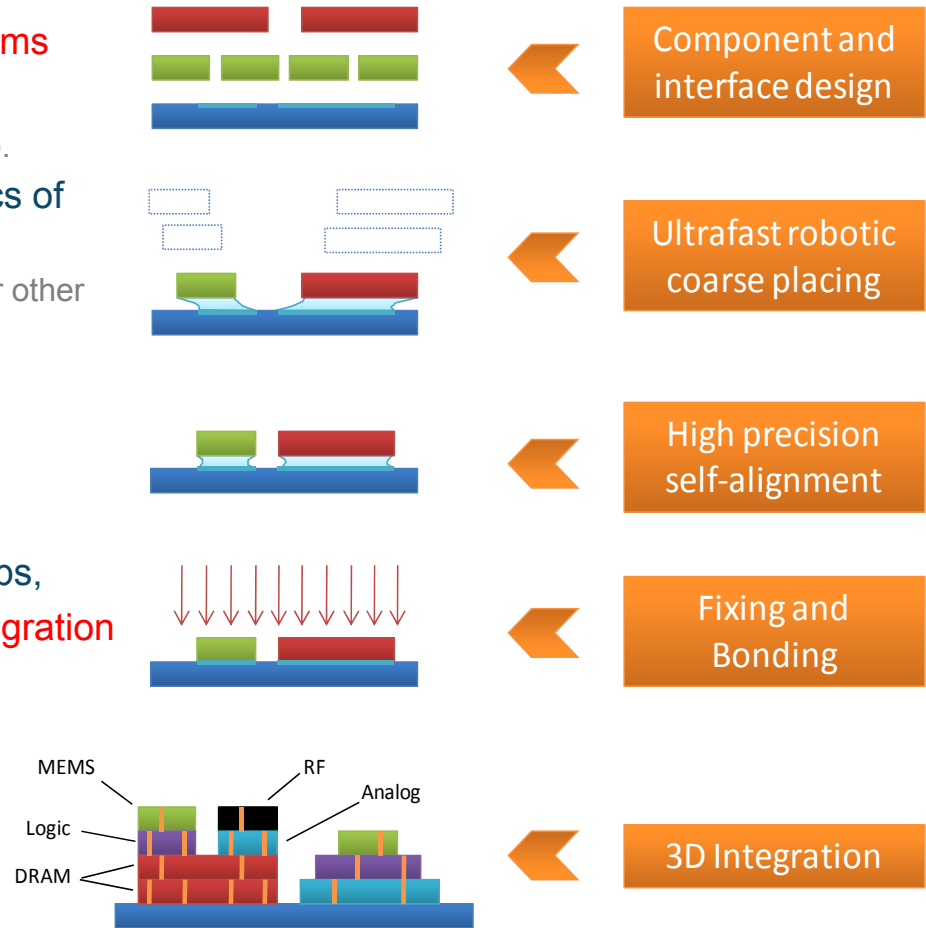
Objective

- FAB2ASM will develop a new manufacturing technology

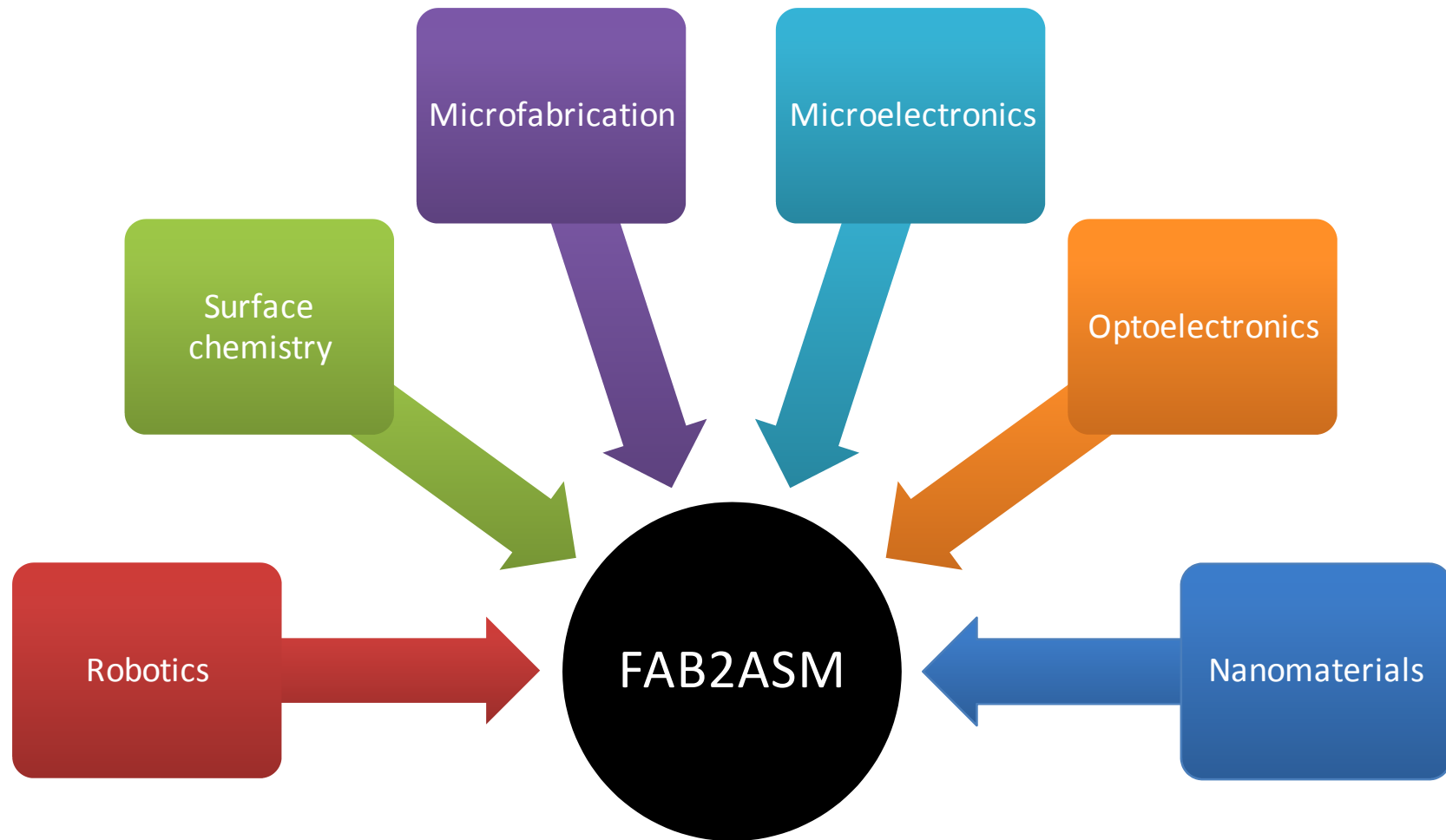
- 3D integration of microelectronics and microsystems
- Simultaneously very fast and very accurate
 - currently it is the bottle neck limiting industry take-up.
- Joining the traditional robotic tools with the physics of self-alignment
 - tiny chips will align due to surface tension of liquid or other physical forces acting at the microscale.

- FAB2ASM will develop a highly industry relevant technology

- not only reuses most of the industrial process steps,
- dramatically improves the performance of the integration process in terms of precision and efficiency
 - handling of small (100 μm) and/or thin dies (20 μm)
 - ultra high speed assembly (40,000 unit per hour)
 - while ensuring industry proven reliability.



Interdisciplinary nature of FAB2ASM research



History and facts

- Call
 - FoF.NMP.2010-3: Intelligent, scalable, manufacturing platforms and equipment for components with micro and nano-scale functional features

Timetable:

- Planning started: March 2009
- Call Published: 30 July 2009
- Closing Date: 3 November 2009
- Evaluation finalized: 2 February 2010
- Contract signed: 13 April 2010
- Starting date: 1 May 2010

- Budget:
 - 7,123,528 EUR
- EC funding
 - 4,733,600 EUR

How did we found the call?

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Initially we targeted an ICT call, then the following email arrived.

“Hello Krisztina,

Actually I found one problem – it seems that there are two calls we could aim at. We were concerning more on ICT3.9a. But as I just noticed that the call FoF.NMP.2010-3 could also fit (more specific for us, but seems also requires more industrial relevance). Please check the attached file for the call info. They have very similar deadline (26.10 vs. 03.11).

What do you think about it? Best regards, Quan”

How we built the consortium

TIME	EVENT / MILESTONES
2008 Nov.	Discussing the project idea (ICT call)
2009 March	Meeting in Brussels (only 2 partners)
2009 May	Draft project abstract is prepared (coordinator)
2009 May-June	11 companies are contacted (1 agrees to join)
2009 Summer	EPOSS - The European Technology Platform on Smart Systems Integration Proposers day, Germany, 5 min. some interest but no involvement
2009 July	IMEC involved
2009 August	Meeting in Leuven, 5 partners are on board
2009 August-Sept	6 more partners involved
2009 October	Just before submission deadline one ind. partner and one research center withdraws

Consortium

- 3 European industrial companies, 5 research centers (including Aalto University as coordinator), 1 consultant company. The beneficiaries are:
 - Aalto-korkeakoulusäätiö (Aalto University), the Coordinator ,
 - Universite de Franche-Comte,
 - Eidgenoessische Materialpruefungs- und Forschungsanstalt,
 - Interuniversitair Micro-electronica Centrum vzw,
 - Universiteit Twente,
 - STMicroelectronics srl,
 - NXP Semiconductors Netherlands BV,
 - Beam Express S.A.,
 - ALMA Consulting Group SAS.

EMAILS Exchanged

- Preparation Stage: 726
- Negotiation stage: ~200, with project officer 35, and multiple phone calls
(professional, helpful and patient project officer)
- Implementation stage: 686 (only in 2 month time)



Negotiation stage

Evaluation results

1. Scientific and/or tech. excellence 4,5/5,
 2. Implementation 4,5/5,
 3. Impact 4,5/5
- Total 13.5/15 scores

Major comments received from the Evaluators

- reschedule couple of milestones
- The demonstrators should be planned sequentially as they are technically linked to each other.
- Establish an IPR board

Negotiation Meeting on 12th of February at 10:30 approx. 1 hours

- questions related to subcontracting
- financial viability check

Contractual stage

- GPF, GA , Accession Forms are signed in 2 month time, record speed!

Signing Event at Valencia, 13.04.2010



Dr. Quan Zhou cross signed the grant agreement with Mr. Herbert von Bose, Director of Industrial Technologies of DG Research, of European Commission

Contact (Coordinator)

- Quan Zhou, Dr. Tech., Adjunct Professor (Docent),
 - Aalto University
 - School of Science and Technology
 - Department of Automation and Systems Technology
 - PO BOX 15500, 00076 AALTO, Finland
-
- Email: quan.zhou@tkk.fi
 - Telephone: +358 9 470 25241
 - Mobilephone: +358 40 855 0311



Project abstract:

http://cordis.europa.eu/fetch?CALLER=FP7_PROJ_EN&ACTION=D&DOC=5&CAT=PROJ&QUERY=012807345b35:ca03:561673ee&RCN=94309