



European Centre of Excellence in Microwave, Millimetre Wave and Optical Devices, based on Micro-Electro-Mechanical Systems for Advanced Communication Systems and Sensors – MIMOMEMS

Project No 202897 (2008 – 2011)

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The overall aim of the **MIMOMEMS** project is to bring the research activity in RF and Optical-MEMS at the National Institute for R&D in Microtechnologies (IMT) to the *highest* European level and create a European Centre of Excellence in Microwave, Millimetre Wave and Optical Devices, based on Micro-Electro-Mechanical Systems (MEMS) for Advanced Communication Systems and Sensors.



MIMOMEMS objectives:

WP1 - Exchange of know-how and experience

WP2 - Increase IMT's Human Potential

WP3 - Increase IMT's Technology Potential

WP4 - Increase IMT's Scientific Visibility

WP5 - Increase IMT's technology transfer for economic needs

Results after 6 month

WP1

• Research visits to FORTH for common work regarding manufacturing of acoustic devices and optical devices (July 2008), at Thales Alenia Space Toulouse for a new FP7 STREP proposal (Nov 2008) and at LAAS Toulouse to consult LAAS scientists regarding the 110 GHz "on wafer" facility upgrading offer.

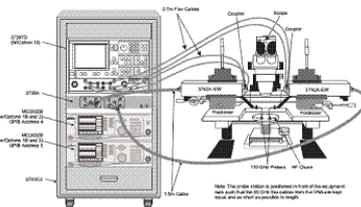
Research visit of Dr G Konstantinidis (FORTH) and Prof R Plana (LAAS) in the IMT Nanofab facility (Sept. 2008) were technical discussions took place regarding the MINAFAB facility and of Dr. H. Granier and Dr. P. Fadel, experts in LAAS Toulouse clean room, to advise the future developments in the MINAFAB clean room facility of IMT (Nov. 2008)

WP2

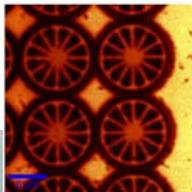
• An announcement regarding the **hire** intention for 2 postdocs with expertise in RFMEMS and Optical MEMS was posted on the website of the project. Dr George Simion from Purdue Univ USA was contacted and we have his "principle" agreement to come on one of these positions in September 2009.



The "on wafer" microwave measurement equipment till 65 GHz purchased by IMT-Bucharest in 2007 in the frame of the National Programme CEEEX (Module 4)



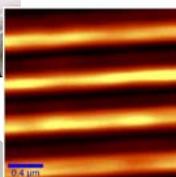
The on wafer measurements set-up and VNA up to 110 GHz - the complete system



Confocal image of round structure 30X30 μm scanning area



The new purchased SNOM



SNOM image in contact mode of an Au array of lines patterned using EBL - 2X2 μm scanning area

WP3

- Near field scanning optical microscope (SNOM). Acquisition finished in August. The SNOM was delivered in October 2008, installed at IMT MINAFAB Facility and is **fully operational**.

- Upgrade of the VNA up to 110 GHz. Acquisition procedure finished. Contract was signed on December the 5th

- Upgrade the on wafer measurements set-up up to 110 GHz. Acquisition procedure will finish and contract will be signed before the end of December

- The frequency synthesiser up to 65 GHz (+ mixer for 110 GHz), Acquisition procedure finished. Contract was signed on December the 5th

- The Au plating facility - in 2009

WP4

The MIMOMEMS project has organized the **first International Scientific Session** at the CAS Conference 2008 (13-15 October 2008): 3 oral sessions and 1 poster session.

2 invited lecturers: G. Konstantinidis (FORTH Heraklion); T. Vähä Heikkilä (VTT Helsinki)

WP5

- Project web page

- Promotional article in the Romanian Journal "Market Match"

- Promotional article in Parliament Magazine (IMT funds-not MIMOMEMS)

Proposal: Joint European Laboratory between : LAAS-CNRS Toulouse, Forth Heraklion, IMT Bucharest (2008-2011) "SMART MEMS/NEMS for advanced communications

Proposal for the 2nd Space Call in FP7 "Microwave Nitride nOvel Technologies for Advanced tUnable and RecOnfigurabile Satellites - MINOTAUROS" (STREP); Deadline 4 Dec. 2008; Consortium made up of 7 partners from 4 EU members; Project leader : Thales Alenia Space (France), a leading actor in the space industry