Job offer

Position: Post-doc
Expected starting date period: as soon as possible
Duration: 1 year (possible extension + 1 year)
Deadline of this proposal : positions opened until filled

RF-MEMS Wafer-Level Packaging

Summary of research/technical work :

The objective of the work of this position is the design, fabrication and characterization of wafer level packaging technology for (RF-) MEMS devices through the projects of European Union (EU) named MEMSPACK, MEMS-4MMIC. Brief description of the packaging technologies currently going on will be given in the following.

Two wafer level packaging technologies will be developed and compared on the basis of cost and electrical properties for various feed-through techniques:

· The first approach will use pyrex glass as packing material with a wafer level BCB bonding. Indeed pyrex glass is suitable for low cost wet etching technology and RF-MEMS applications. The BCB sealing layer due to its flow characteristics during curing provides a good seal for signal feed-through that will be limited in this case to planar pad access.
· The second approach will rely on a whole BCB technique using a BCB film membrane and always a wafer level BCB bonding technique. The BCB film membrane can be fabricated on the devices wafer using BCB multi-layers coating and a silicon carrier wafer transfer technology. This solution is attractive since BCB is a photo patternable polymer and shows minimal outgassing, low moisture uptake and excellent electrical properties up to the mm-wave range. In this case both planar and vertical RF access will be provided in order to offer 3Dinterconnect possibilities for antenna integration on the package, for example.

Required knowledge of candidate:

- Background in electromagnetics and technologies
- Knowledge of CAD and FEM software
- Cleanroom experience
- Characterization experience of the device
- Experience in fabrication of RF-MEMS devices will be appreaciated
- Fluent english

Location and other practical information:

IEMN, Villeneuve d'Ascq, France

Contact(s):

Applications should include a curriculum vitae with name, address (including e-mail) and a list of publications.
Applications should be sent to:
Seonho Seok, seonho.seok@iemn.univ-lille1.fr, http://www.iemn.univ-lille1.fr/