Major Unit : code UE HAE926E

Test and reliability of Integrated Circuits and Systems (5 ECTS)

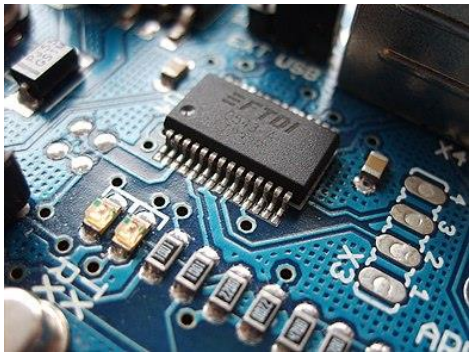
Professor Arnaud Virazel

Learning Outcomes:

- Understand the problems related to the industrial testing of integrated circuits and systems as well as the methods to reduce the costs of this test (vector generation, design for test, ...). Understand characterization techniques and know how to determine the operating and performance margins of digital integrated circuits.

Description :

- Lecture (21h)
  - Fundamentals of Test and Reliability
  - Defect and Fault modeling: struck-at, delay and bridging faults
  - Fault simulation: Purpose and algorithms
  - Test Pattern Generation: Purpose and algorithms for combinatorial and sequential designs
  - Design for testability
    - BIST
    - Scan et Scan for delay fault
    - Boundary scan
  - Diagnosis: Purpose and algorithms
  - Introduction to Memory testing
  - Industrial test solutions



- Labs (21h)
  - Hands-on exercices with
    - TETRAMAX for Sysnopsys (fault simulation and test generation)
    - DfT Compiler for Sysnopsys (Design for testability)
    - Advantest V93000 (Industrial test)

Literature

- Essentials of Electronic Testing, M.L. Bushnell et V.D. Agrawal, Kluwer Academic Publishers