



PhD Course in Physics and Astronomy
PhD Course in Material Science and
NanoTechnology

Topics on Microelectronics

ToM2022 - XVI Year

Updated information at
www.mbtechnoservices.com
Director: Andrea Baschirotto



2020
Best SCS Chapter Award

Course ToM2022



"Semiconductor trip: from a simple idea to a complex manufacturing"

May, 9th-13th, 2022

Abstract: The intent of this course, *dedicated to PhD students and held in Italian*, is giving a general overview of the complex mechanism that, starting from a simple idea, leads to the manufacturing of a microelectronic device. The environment of a big company as STMicroelectronics will be presented as well as the fundamentals steps of the manufacturing path. During the course, the importance of the research and development and the value of the knowledge will be discussed in the frame of the willingness of a corporate social responsibility.

Course Contents

Application overview

- Ultrasound for Health (G.Ricotti)
- Micro Electro Mechanical System (MEMS) for motion (P.Pesenti)

Design and Manufacturing steps overview:

- MEMS Technology (A.Sciutti)
- Process Technology (S.D.Mariani/G.Fazio)
- Analog & Mixed Signal Design Implementation Flows (D. Genova)
- Package platform and co-design challenges (G.Graziosi)
- Testing (D.Appello)
- Reliability (A.Mancaloni)
- Failure Analysis (M.Merlotti)

ST's culture and special programs

- ST company overview and its Technical Staff community presentation (S. Fulgoni)
- Innovation at ST (A. Cremonesi)
- Design Research and Development (P. Rolandi)
- ST Technology Research and Development (A. Molfese)
- An introduction to ePCM (A. Redaelli)
- Social Sustainability (L. Fracassini)
- Conclusions (M. Marchesi)

On-line registration at the website www.mbtechnoservices.com

Course participation includes

- attendance to all lectures
- pdf material for all lectures
- certificate of participation
- final exam with certificate



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Lecture Schedule

Monday, May, 9th, 2022

- 9:00 - 09:30 Marco Marchesi - "Introduction to the course"
- 9:30 - 10:30 Sonia Fulgoni - "ST Company overview and its Technical Staff Community"
- 10:30 - 12:30 Alessandro Cremonesi - "Innovation at ST"
- 14:00 - 16:00 Antonio Molfese - "ST Technology Research and Development"

Tuesday, May, 10th, 2022

- 9:00 - 11:00 Paolo Pesenti - "Micro Electro-Mechanical System (MEMS) for motion"
- 11:00 - 13:00 Alessandra Sciutti - "MEMS Technology"
- 14:30 - 16:30 Simone Dario Mariani, Giuseppe Fazio - "Process Technology"

Wednesday, May, 11th, 2022

- 9:00 - 11:00 Giulio Ricotti - "Ultrasound for Health"
- 11:00 - 13:00 Domenico Genova - "Analog & Mixed Signal Design Implementation Flows"
- 14:30 - 16:30 Pierluigi Rolandi - "Design Research and Development"

Thursday, May, 12th, 2022

- 9:00 - 11:00 Giovanni Graziosi - "Package platform and co-design challenges"
- 11:00 - 13:00 Davide Appello - "Testing"
- 14:30 - 16:30 Alberto Mancaleoni - "Reliability"

Friday, May, 13th, 2022

- 9:00 - 11:00 Mauro Merlotti - "Failure Analysis"
- 11:00 - 13:00 Luisa Fracassini - "ST's Sustainable Excellence"
- 14:30 - 16:30 Andrea Redaelli - "An introduction to ePCM"
- 16:30- 17:00 Marco Marchesi - "Conclusions"

Lectures will be held in the Room U4/08

Building U4 - Piazza della Scienza 5 - 20126 Milan (Italy)