



UPM International Summer School

Nanotech



ETSIT and ISOM

19, 20 & 21 June 2019

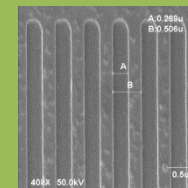
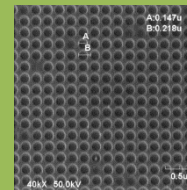
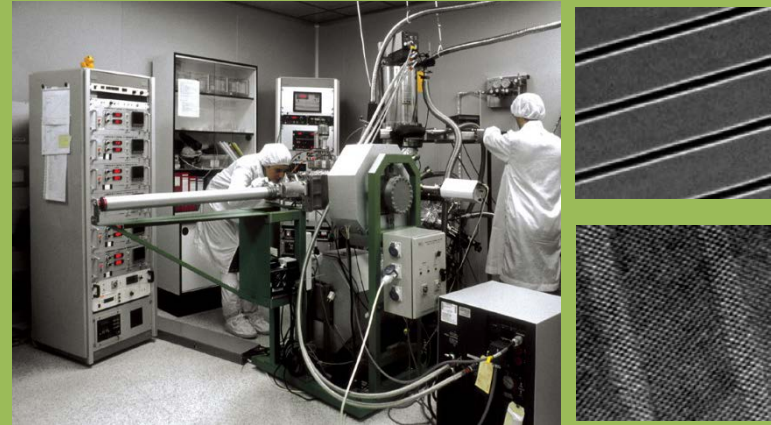
Director: Prof. Fernando Calle

Introduction to the foundations of nanotechnology, the properties of nanostructures, and the most usual tools for their fabrication and characterization. Also, the development of different nanodevices and nanosystems, especially in the areas of nanoelectronics, nanophotonics and nanobiotechnology.

Students: Bachelor

Pre-requisites: None

ECTS: 1 (10 class hours)





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MODULE 1: I. Introduction to Nanotechnology: principles, size, scaling down, application overview; technological social and environmental risks; global impact

II. Nanomaterials (semiconductors, carbon-based nanostructures, biomaterials) and nanotechniques for fabrication and characterization

MODULE 2: I. Some nanodevices: nanoelectronics, nanophotonics, nanobiotechnology

II. ISOM-UPM lab tour

MODULE 3: Industrial and social impact of nanotechnologies

Dr. Pedro Serena Domingo
Spanish National Research Council

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Illinois.edu

65nm	45nm	32nm	22nm	14nm	10nm	7nm	Beyond
2005	2007	2009	2011*	2013*	2015*	2017*	2019+
MANUFACTURING			DEVELOPMENT		RESEARCH		

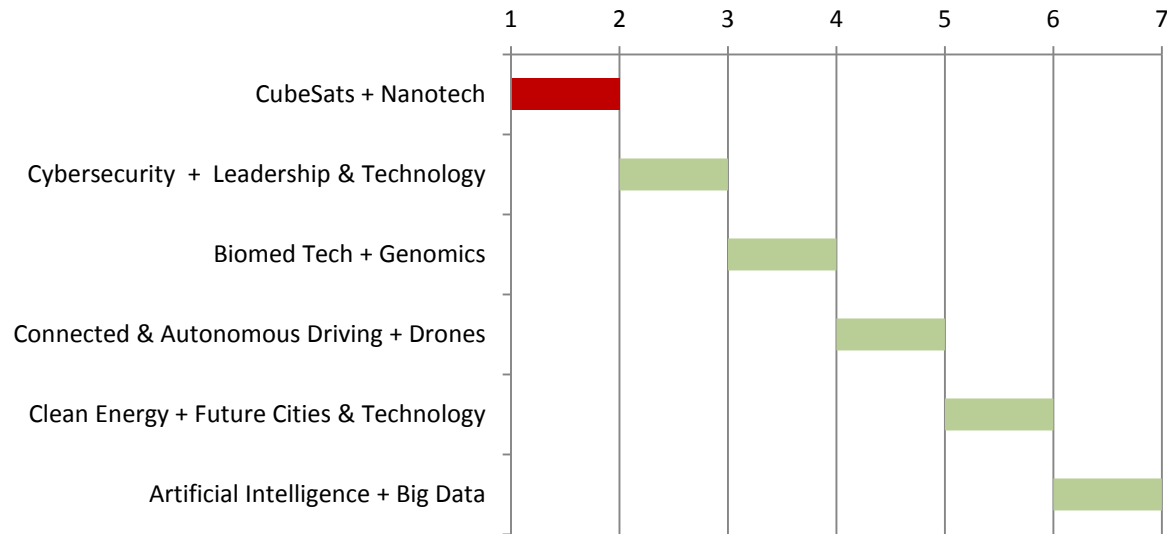
INTEL
*projected



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Schedule



Week	Monday	Tuesday	Wednesday	Thursday	Friday
1			Lecture Practical Exercise	Lecture LabTour	Industry Talk



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Faculty



Fernando Calle is full professor of electronics and nanotechnology, currently leading the Semiconductor Device Group and Associate Vice Rector for Doctoral Studies and Research. He has been the principal investigator of 35+ R&D projects, coauthor of 200+ international publications, 50+ invited talks and five patents. His current research is related to the physics, technology, and applications of wide bandgap semiconductors and graphene.



Dr. Pedro Serena Domingo is the coordinator of Spanish National Research Coordinator for the Madrid Region, as well as Director of the Center for Theoretical Physics and Mathematics. His research is related to modeling and studying electronic and mechanical properties of several nanostructures. He has authored 90 scientific papers and 60+ papers on scientific dissemination and policy, and has contributed to doctoral and master courses.