III level course: **Physical Chemistry of Materials for Nanotechnologies** (36 h teaching)

Classes will be given in English in Room 2F of the DISAT Department (DISAT Entrance number 2, ground floor)

Length in hours	**Subject**	**Teacher**	**Timetable DD/MM/2019**
4	Overview of the chemical bond Nanostructured materials (definition, techniques of making, basic physico-chemical properties): nanotubes (both carbon-based and not), nanoparticles, nanoporous systems.	Bonelli, Barbara	15/05 14.00-16.00 16/05 14.00-16.00
4	Basics of solid state physics: Schrodinger equation, electronic states in solids, quantum confinement	Ricciardi, Carlo	17/05 14.00-16.00 22/05 14.00-16.00
2	Structural characterizations: IR spectroscopy	Fiorilli, Sonia	23/05 14.00-16.00
3	Morphological characterizations: TEM and SEM microscopies (including EDX).	Manzoli, Maela (UniTO)	24/05 14.00-17.00
2	Mechanical properties of inorganic nanocomposites	Palmero, Paola	29/05 14.00-16.00
3	Top-down nano-structuration processes: clean room; thin film growth (PVD and CVD); nanolithography (optical, electronic, ionic, SPM); etching (wet and dry).	Giorgis, Fabrizio	30/05 14.00-17.00
2	Compositional characterizations: XPS, photoemission spectroscopies.	Castellino, Micaela	31/05 14.00-16.00
2	The use of VT-IR technique to characterize gas-solid systems.	Bonelli, Barbara	05/06 14.00-16.00
2	CO_2 interaction with nanoporous solids and other nanomaterials for CCS.	Bonelli, Barbara	06/06 14.00-16.00
2	Nanostructured TiO_2: synthesis, properties and applications.	Bonelli, Barbara	07/06 14.00-16.00
2	Nanotechnologies for groundwater remediation.	Sethi, Rajandrea	12/0614.00-16.00
2	Photonic nanostructures: photonic crystals.	Giorgis, Fabrizio	13/06 14.00-16.00
2	Sensors for bio-diagnostics (cellular, genomic, proteomic): chemical and biochemical surface functionalization.	Rivolo, Paola	14/06 14.00-16.00
3	Nanocatalysts for water splitting.	Armandi, Marco	19/06 14.00-17.00