



PHYSICAL CHEMISTRY OF SOLID STATE DEVICES

Enrollment year	2016/2017
Academic year	2016/2017
Regulations	DM270
Academic discipline	CHIM/02 (PHYSICAL CHEMISTRY)
Department	DEPARTMENT OF CHEMISTRY
Course	CHEMISTRY
Curriculum	PERCORSO COMUNE
Year of study	1°
Period	2nd semester (01/03/2017 - 20/06/2017)
ECTS	6
Lesson hours	48 lesson hours
Language	ITALIAN
Activity type	ORAL TEST
Teacher	SPINOLO GIORGIO (titolare) - 3 ECTS QUARTARONE ELIANA - 3 ECTS
Prerequisites	=
Learning outcomes	It is the aim of the course to guide the student to understand the properties that are at the basis of some selected solid state devices, and to discuss the relations between these properties and the underlying electronic and structural features of the constituent materials.
Course contents	The course describes the basic principles of selected types of solid-state devices, as well as their constituent materials. These include: a) gas sensors (electrochemical sensors and semiconductor-based sensors), b) photovoltaic cells (semiconductor-based cells, polymeric cells, Graetzel cells), c) thermoelectric materials, d) magnetic materials. According to the previous background of the students, the course can include a short introduction

	to basic topics (band structure of solids, point defects and solid electrolytes, electrode processes, simple and coupled transport processes, an outline of magnetism).
Teaching methods	Lectures
Reccomended or required readings	There is not a standard textbook. The lecture slides are available to the students. The teachers provide references to the relevant review papers of the current scientific literature.
Assessment methods	Oral exam.
Further information	Oral exam.
Sustainable development goals - Agenda 2030	\$ b legenda sviluppo sostenibile