

Покотило Ю.М.

1	Discipline	Interaction of radiation with matter Part 1. Interaction of radiation with gas-phase and liquid-phase systems Part 2. Electronic processes in metals, semiconductors and dielectrics
2	Year of Study, Speciality	4; 1-31 04 01 Physics: direction 1-31 04 01-04 Physics (managerial activities)
3	Term of Study	7
4	Number of Credits	4
5	Tutors	Associate Professors, PhDs - Pokotilo Yu.M., Stelmakh G.F.
6	Study Objectives	To familiarize the student with the basic physical processes of interaction of electromagnetic radiation of the optical range, ionizing radiation with atomic, molecular and crystalline systems in gas liquid solid-phase media; show the relationship of spectral-energy transformations of radiation with molecular and crystal structure.
7	Prerequisites	Optics , Atomic Physics and Atomic Phenomena
8	Course Content	The discipline contains: theoretical foundations of electronic, vibrational and rotational spectroscopy of simple and complex molecules; basic photophysical processes involving atoms and molecules in the gas and liquid phases; mechanisms of interaction of optical and ionizing radiation with a crystal lattice. The fundamentals of theoretical spectroscopy for solving direct and inverse spectral problems are considered. The fundamentals of the physics of interaction between optical photons, high-energy radiation and particles with a solid are presented, which are used to detect radiation.
9	Literature Recommended	1. Ельяшевич М.А. Атомная и молекулярная спектроскопия. М.: Эдиториал УРСС, 2001 2. Physics of Quantum Electron Devices/Ed. by F. Capasso. Berlin:Springer, 1990. _ 320 p.
10	Methods of Teaching	Lecture and laboratory studies using comparative and research methods of teaching
11	Language of Teaching	Russian
12	Requirements, Current Assessment	Colloquia , abstract works.
13	Form of Current Assessment	examination