

LIST OF DISSERTATIONS TOPICS FOR DOCTORAL STUDIES COURSES IN 2022

NATURAL SCIENCES

Scientific area	Topics of doctoral dissertations	Supervisors
PHYSICS – N 002	1. <i>Nanostructuring in ionic liquids – insight from QM/MD modelling</i>	Doc. Kęstutis Aidas
	2. <i>MD simulations and combined QM/MM modelling of structural and spectroscopic parameters of bioactive ionic liquids</i>	Doc. Kęstutis Aidas
	3. <i>Application of machine-learning techniques to many-body quantum systems</i>	Prof. Egidijus Anisimovas
	4. <i>Femtosecond ablation of material surfaces and surface roughness control</i>	Dr. Simas Butkus
	5. <i>Modeling transfer phenomena in molecular systems</i>	Doc. Jevgenij Chmeliov
	6. <i>Stochastic and agent-based models of social systems exhibiting long-range memory</i>	Dr. Vygintas Gontis
	7. <i>Tailoring of emission properties of organic compounds</i>	Prof. Saulius Juršėnas
	8. <i>Photophysical properties of biomolecular compounds</i>	Prof. Saulius Juršėnas
	9. <i>Subwavelength optical lattices</i>	Prof. Gediminas Juzeliūnas
	10. <i>Hybrid three-dimensional structures and metasurfaces for electromagnetic applications</i>	Dr. Jan Macutkevič
	11. <i>Applications of Quantum Chemistry Methods designing Quantum Computers</i>	Doc. Mindaugas Mačernis
	12. <i>Classification and modeling of excited electronic states of carotenoids and polyenes using innovative methods of quantum chemistry</i>	Doc. Mindaugas Mačernis
	13. <i>Precision Measurements in Electroweak Sector with the CMS Detector at the LHC</i>	Dr. Aurelijus Rinkevičius
	14. <i>Photonic Crystal Microchip Lasers</i>	Prof. Kęstutis Staliūnas
	15. <i>Perovskite optoelectronic devices</i>	Dr. Patric Ščajev
	16. <i>Development of highly sensitive EPR spectroscopy and applications to study novel functional materials</i>	Doc. Mantas Šimėnas
	17. <i>Enhancing quantum-chemical models by machine-learning based data analysis</i>	Dr. Stepas Toliautas
	18. <i>Generation, detection and applications of broadband terahertz radiation</i>	Dr. Virgilijus Vaičaitis

	19. <i>Evolution of the M33 galaxy stellar disk</i>	Prof. Vladas Vansevičius
	20. <i>Ultrashort pulse generation in mid-infrared spectrum range</i>	Dr. Arūnas Varanavičius
	21. <i>Photophysical and photochemical processes of multi-photon photopolymerization</i>	Prof. Mikas Vengris
	22. <i>Spectroscopic study of the planet-host stars. Star-planet connection</i>	Doc. Edita Stonkutė
	23. <i>Lithium abundances as tracers of stellar and Galactic evolution</i>	Prof. Gražina Tautvaišienė
	24. <i>Excitation relaxation processes in activated scintillators</i>	Doc. dr. Saulius Nargelas
	25. <i>Factoring of the molecular surroundings into theoretical potential-energy surface model of photoactive compounds and their effect on the model-based estimates of measurable parameters</i>	Dr. Stepas Toliautas
	26. <i>The cosmology connection of the Grimus-Neufeld model</i>	Doc. dr. Thomas Gajdosik