

Universitatea din București
Facultatea de Fizică
Departamentul de Structura materiei, Fizica atmosferei și a Pământului,
Astrofizică

Tematică de concurs
pentru poziția 9 vacantă de Conferențiar universitar
din statul de funcții al DSMFAPA
Anul universitar 2018-2019

1. Interacția radiației cu materia
2. Procese fizice asociate comportării duale a electronului
3. Modele atomice de la fizica precuantică la atomi cu mai mulți electroni
4. Spectre de vibrație- rotație în domeniul IR ale moleculelor diatomice
5. Spectrometria în domeniul IR și analiza vibrațională a moleculelor poliatomice
6. Spectrometrie de rezonanță electronică paramagnetică
7. Rezonanța electronică paramagnetică, hamiltonianul de spin

Bibliografie

1. Fizica atomica: note de curs, Florin Popescu si Florin Marica; Ars Docendi, 1998
2. Fizica atomului si a moleculei B. H. Bransden si C. J. Joachain, Bucuresti, 1998
3. Fizica atomică - Vol I și Vol II V. Spolschi, Editura Tehnica, 1953
4. Atkins' physical chemistry - Peter Atkins, Julio de Paula, Oxford University Press, 2010
5. Atoms, Molecules and Photons: An Introduction to Atomic, Molecular and Quantum Physics Wolfgang Demtröder Springer; 2nd ed. 2010
6. Peter Atkins and Ronald Friedman, Molecular Quantum Mechanics, Oxford university press, 2005
7. Quantum physics of atoms, molecules, solids, nuclei and particles Robert Martin Eisberg and Robert Resnick, New York; John Wiley & Sons, 1974
8. The physics of atoms and quanta: introduction to experiments and theory Haken, Hermann Wolf, Hans Christoph Berlin; Springer, 1994
9. Molecular spectroscopy, Ira N. Levine, New York; John Wiley & Sons, 1975

10. Introduction to quantum mechanics: with applications to chemistry, Linus Pauling and E. Bright Wilson, New York; McGraw-Hill Book Company, 1935
11. Introduction to infrared and Raman spectroscopy Norman B. Colthup, Lawrence H. Daly and Stephen E. Wiberley, New York; Academic Press, 1964
12. Physical chemistry, Ira N. Levine, Published by McGraw-Hill, 2009
13. Electron paramagnetic resonance – Elementary Theory and Practical Applications, John Wiley & Sons, A. Weil, James R. Bolton, Wiley-Interscience, 2007

Director de Departament,

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Faculty of Physics
Department of Structure of matter, Earth and atmosphere Physics,
Astrophysics***

***Subjects for concurs
Associate Professor, position 9th
List of positions
Academic year 2018-2019***

1. Interaction of radiation with matter
2. Physical processes associated with dual electron behavior
3. Atomic models from pre-quantum physics to atoms with multiple electrons
4. The infrared vibration-rotation spectrum of diatomic molecules
5. The infrared spectrometry and the analysis of the vibration of polyatomic molecules
6. Electron paramagnetic resonance spectroscopy
7. Electron paramagnetic resonance, the spin Hamiltonian

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- [1]. Fizica atomica: note de curs, Florin Popescu si Florin Marica; Ars Docendi, 1998
- [2]. Fizica atomului si a moleculei B. H. Bransden si C. J. Joachain, Bucuresti, 1998
- [3]. Fizica atomică - Vol I și Vol II V. Spolschi, Editura Tehnica, 1953
- [4]. Atkins' physical chemistry - Peter Atkins, Julio de Paula, Oxford University Press, 2010
- [5]. Atoms, Molecules and Photons: An Introduction to Atomic, Molecular and Quantum Physics Wolfgang Demtröder Springer; 2nd ed. 2010
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