

QUANTUM MECHANICS FOR PHOTONICS:  
FROM MOLECULAR SPECTROSCOPY TO LOW DIMENSIONAL MATERIALS APPLICATIONS

Dr. Maksim Shundalau, University of Salerno, Italy

### Monday 12.8

9.00	Introduction to the quantum theory of molecular systems and low dimensional materials (part 1)
10.00	Introduction to the quantum theory of molecular systems and low dimensional materials (part 2)
11.00	Introduction to the quantum theory of molecular systems and low dimensional materials (part 3)
12.00	<i>Lunch break</i>
13.00	Self-consistent field method (part 1)
14.00	Self-consistent field method (part 2)
15.00	Self-consistent field method (part 3)

### Tuesday 13.8

9.00	Electron correlation methods (part 1)
10.00	Electron correlation methods (part 2)
11.00	Electron correlation methods (part 3)
12.00	<i>Lunch break</i>
13.00	Basics of the density functional theory (part 1)
14.00	Basics of the density functional theory (part 2)
15.00	Basics of the density functional theory (part 3)

### Wednesday 14.8

9.00	Modeling of structure and optical properties of diatomic molecules (part 1)
10.00	Modeling of structure and optical properties of diatomic molecules (part 2)
11.00	Modeling of structure and optical properties of polyatomic molecules (part 1)
12.00	<i>Lunch break</i>
13.00	Modeling of structure and optical properties of polyatomic molecules (part 2)
14.00	Modeling of structure and optical properties of polyatomic molecules (part 3)
15.00	

### Thursday 15.8

9.00	Seminars
10.00	Seminars
11.00	Seminars
12.00	<i>Lunch break</i>
13.00	Modeling of structure and optical properties of LDMs (part 1)
14.00	Modeling of structure and optical properties of LDMs (part 2)
15.00	

### Friday 16.8

9.00	Seminars
10.00	Seminars
11.00	<i>Lunch break</i>
12.00	Final test
13.00	
14.00	
15.00	

University of Eastern Finland, Joensuu campus, Metria (M101)

More information about the course:

<https://sites.uef.fi/photonics/joensuu-summer-school-on-optics/>