Master course lecture in electron spin resonance spectroscopy (20124801 + 20124802)	
Lecturer	Prof. Dr. Benesh Joseph
Language	English
Period	01.10.2023 - 31.03.2024
Maximum participants	20
Credit points	**8 ECTS**
Qualification aims:	The students have a detailed and critical understanding of theoretical and practical aspects of electron spin resonance spectroscopy. They are able to apply this knowledge to solve related problems including analysis and interpretation of experimental data they would generate as part of the course.
Content:	This course covers in depth the fundamental concepts of electron spin resonance (ESR) spectroscopy and their applications to diverse problems. The general concepts of magnetic resonance will be presented. Examples are: electron-nuclear spin Hamiltonian, hyperfine interaction, electron-electron interactions and forbidden electron-nuclear transition. Students will learn about continuous wave and pulsed ESR techniques for the determination of weak hyperfine and dipolar couplings with appropriate examples of the variety of information that can be obtained. In some weeks, they will perform a few of these experiments in the laboratory instead of the weekly exercise.
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