

<b>Module title</b>		<b>Abbreviation</b>
Electrochemical Energy Storage and Conversion		o8-FU-EEW-222-m01
<b>Module coordinator</b>		<b>Module offered by</b>
holder of the Chair of Chemical Technology of Material Synthesis		Chair of Chemical Technology of Material Synthesis
<b>ECTS</b>	<b>Method of grading</b>	<b>Only after succ. compl. of module(s)</b>
5	numerical grade	--
<b>Duration</b>	<b>Module level</b>	<b>Other prerequisites</b>
1 semester	undergraduate	--
<b>Contents</b>		
Chemistry and application of battery systems (aqueous and non-aqueous systems like lead, nickel cadmium and nickel metal hydride, sodium sulfur, sodium nickel chloride, lithium ion accumulators), electrochemical double layer capacitors, redox-flow battery, fuel cell systems (AFC, PEMFC, DMFC, PAFC, SOFC), Solar cells (Si, CIS, CIGS, GaAs, organic and dye solar cell), thermoelectric devices.		
<b>Intended learning outcomes</b>		
The students gain comprehensive knowledge in the field of electrochemical energy storage and transformation and are able to apply this to scientific problems.		
<b>Courses</b> (type, number of weekly contact hours, language – if other than German)		
V (2) + S (2) Module taught in: German or English		
<b>Method of assessment</b> (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)		
a) written examination (approx. 90 minutes) or oral examination of one candidate each (approx. 30 minutes) and b) talk (approx. 30 minutes); (weighted 65:35) Language of assessment: German and/or English Assessment offered: Once a year, summer semester		
<b>Allocation of places</b>		
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<b>Additional information</b>		
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<b>Workload</b>		
150 h		
<b>Teaching cycle</b>		
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<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)		
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<b>Module appears in</b>		
Master's degree (1 major) Functional Materials (2022) Master's degree (1 major) Quantum Engineering (2024) Master's degree (1 major) Physics International (2024)		
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