



## Electrochemical impedance spectroscopy and its applications in the process and material science

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### Course description:

Between the electrochemical techniques the electrochemical impedance spectroscopy (EIS) holds a particular place. In contrast to all other methods which analyze the signals as functions of time EIS represents signals as a function of frequency. EIS is very often used but frequently misunderstood or even abused. This technique permits to obtain information about the surface geometry, roughness and porosity of the electrodes and may be applied to study electrochemical processes in the industry, fuel cells and batteries, paints and corrosion protection, conductive polymers, membranes, semiconductors, electrolysis, etc.

In the course the theoretical bases of this method will be presented, methods of the determination of impedances, methods of the verification of the obtained data by Kramers-Kronig transforms, stability, data simulation and analysis. The applications in the domain of porous electrodes, hydrogen technologies, paints and coatings, semiconductors, etc., will be presented.

TERMINY WYKŁADÓW			
Data	Dzień tygodnia	Godzina	Sala
10 czerwiec 2013	poniedziałek	12-15	LUWR (Chemia A)
11 czerwiec 2013	wtorek	9-12	400A (Gmach Główny)
12 czerwiec 2013	środa	9-12	400A (Gmach Główny)
13 czerwiec 2013	czwartek	9-12	400A (Gmach Główny)
14 czerwiec 2013	piątek	8-11	LUWR (Chemia A)