Electrical methods of materials and structures characterization

Lecturer: dr hab. inż. Piotr Jasiński (WETI)

Monographic lectures for PhD students (15 hrs)

1. Electrical properties of materials
2. Measurements of resistance (solid, liquids, thin films - 2 -probe, 4 -probe, Van der Pauw, sheet resistance)
3. Potentiodynamic / galvanodynamic measurements
4. Determination of transport numbers
5. Hebb-Wagner method of partial conductivity measurements
6. Chemical diffusion coefficient measurement using electrical resistance relaxation
7. Impedance spectroscopy - equipment, measurements, data representation
8. Impedance spectroscopy - equivalent circuits, fitting spectra to equivalent circuits
9. Impedance spectroscopy - Randles model, ALS model
10. Impedance spectroscopy - case study: polycrystalline materials, thin films
11. Impedance spectroscopy - case study: mixed conductors
12. Impedance spectroscopy - case study: fuel cells, measurements with reference electrode
13. Current interruption method of polarization resistance measurements
14. Dielectric constant determination of solids, liquids and powders
15. Electrical properties of composites - effective medium approximations

Data	Dzień tygodnia	Godzina	Sala
2012-10-22	Poniedziałek	14.45-17.00	Sala 207 NE
2012-10-23	Wtorek	14.45-17.00	Sala 207 NE
2012-10-24	Środa	14.45-17.00	Sala 207 NE
2012-10-25	Czwartek	14.45-17.00	Sala 207 NE
2012-10-26	Piątek	14.45-17.00	Sala 207 NE

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