



#### Head

Wojciech Wróblewski

#### Current research

- Potentiometric sensor arrays for the analysis of pharmaceuticals – release and taste masking effect studies
- Electrochemical studies of coordination properties of synthetic tailored oligopeptides and neutral peptides of biological importance (e.g. beta-amyloid)
- Application of organoboron receptors in recognition and sensing of various analytes
- Interaction of biomolecules at liquid-gas, liquid-liquid and liquid-solid interfaces
- Mechanism of interaction of saponins with biological membranes using Langmuir monolayer and bilayer models

#### Staff

Patrycja Ciosek  
Urszula Wawrzyniak  
Kamil Wojciechowski

#### Current PhD students

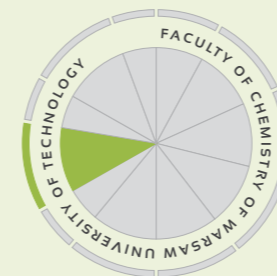
Paweł Ćwik  
Martyna Jańczyk  
Aleksandra Kezwoń  
Marta Orczyk  
Iwona Ufnalska  
Małgorzata Wesoty  
Magdalena Wiloch

#### Former PhD students

Patrycja Ciosek  
Renata Toczyłowska-Mamińska  
Marta Żubrowska  
Anna Kutyła-Olesiuk

#### Selected publications

- Ciosek P., Wróblewski W., *Sensor Arrays for Liquid Sensing – Electronic Tongue Systems*, *Analyst*, 132, 963, 2007
- Wojciechowski K., *Hydration Energy or Hydration Force? Origin of Ion-specificity in Ion Selective Electrodes*, *Current Opinion in Colloid & Interface Science*, 16, 601, 2011
- Wojciechowski K., Orczyk M., Gutberlet T., Trapp M., Marcinkowski K., Kobiela T., Geue T., *Unusual Penetration of Phospholipid Mono- and Bilayers by Quillaja Bark Saponin Biosurfactant*, *Biochimica et Biophysica Acta – Biomembranes*, 1838, 1931, 2014
- Kezwoń A., Wojciechowski K., *Interaction of Quillaja Bark Saponins with Food-Relevant Proteins*, *Advances in Colloid and Interface Science*, 209, 185, 2014
- Ciosek P., Wróblewski W., *Potentiometric Electronic Tongues for Foodstuff and Biosamples Recognition – an Overview*, *Sensors*, 11, 4688, 2011
- Witkowska Nery E., Jastrzębska E., Żukowski K., Wróblewski W., Chudy M., Ciosek P., *Flow-Through Sensor Array Applied to Cytotoxicity Assessment in Cell Cultures for Drug-Testing Purposes*, *Biosensors and Bioelectronics*, 51, 55, 2014



#### Research profile

New architecture of sensors and biosensors  
Sensor arrays, (bio)electronic tongues, hybrid electronic tongues  
Flow-through and flow-injection analysis with sensor detection  
Chemometrics  
Langmuir monolayers, bilayers  
Colloids and interfaces  
Surface tension and surface rheology  
Biosurfactants, especially saponins

#### Collaboration

Helmholtz-Zentrum Berlin (Germany)  
Paul Scherrer Institute (Switzerland)  
Queen Mary University of London (UK)  
Universitat Autònoma de Barcelona (Spain)

#### Scientific Awards

- Go8 European Fellowship – Patrycja Ciosek
- Grant for Outstanding Young Scientists of the Polish Ministry of Science and Higher Education – Patrycja Ciosek

#### Research equipment

- Multichannel potentiostats, multichannel millivoltmeters
- Spectrophotometers, spectrofluorometer, microplate reader
- Drop Shape Analysis tensiometers
- Dynamic Light Scattering instrument
- Electrokinetic (zeta) Potential analyzer

