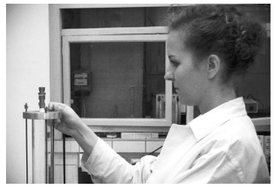
Laboratory of Low Temperature Plasma Processes

Head

Krzysztof Krawczyk

Staff

Sławomir Jodzis
Michał Młotek
Zenobia Rżanek-Boroch
Bogdan Ulejczyk

Current PhD students

Ewelina Reda
Bogdan Wnęk
Małgorzata Majdak

Former PhD students

Agnieszka Górska
Michał Młotek
Anna Opalska
Joanna Ruszniak

Current research

- Destruction of volatile organic compounds
- Plasma and plasma-catalytic processing of particularly stable substances and environmentally harmful and toxic materials present in industrial wastes
- The couple of methane to higher hydrocarbons at the atmospheric pressure under gliding discharges and barrier discharge conditions
- Ozone synthesis
- Deposition of antimicrobial coating on polymers

Selected publications

Młotek M., Sentek J., Krawczyk K., Schmidt-Szałowski K., *The Hybryd Plasma-Catalytic Process for Non-Oxidative Methane Coupling to Etylene and Ethane*, Applied Catalysis A: General 366, 232, 2009

Krawczyk K., Młotek M., Ulejczyk B., Schmidt-Szałowski K., *Methane Conversion with Carbon Dioxide in Plasma-Catalytic System*, Fuel, 117, 608, 2014

Ulejczyk B., Krawczyk K., Młotek M., Schmidt-Szałowski K., Nogaj Ł., Kuca B., *Decomposition of Carbon Tétrachloride in the Reactor of Dielectric Barrier Discharge with Different Power Suppliers*, The European Physical Journal – Applied Physics, 61(2), 24324p1, 2013

Jodzis S., *Application of Technical Kinetics for Macroscopic Analysis of Ozone Synthesis Process*, Industrial & Engineering Chemistry Research, 50, 6053, 2011

Rżanek-Boroch Z., Dziadczyk P., Czajkowska D., Krawczyk K., Fabianowski W., *Plasma Deposition of Antimicrobial Coating on Organic Polimer*, The European Physical Journal – Applied Physics 61(2), 24316p1, 2013

Jodzis S., *Temperature Effects Under Ozone Synthesis Process Condition*, The European Physical Journal – Applied Physics, 61(2), 24319p1, 2013

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Research profile

Decomposition of stable or toxic substances in non-equilibrium plasma

Surface of polymers treatment

Ozone synthesis

Reaction of nitrous oxide in non-equilibrium plasma

Methane coupling to C2 hydrocarbons in plasma catalytic system

Thin film deposition under plasma condition

Collaboration

Technische Universität Braunschweig (Germany)

National Institute of Public Health, National Institute of Hygiene, Food Safety Department, Warsaw (Poland)

Military University of Technology, Warsaw (Poland)

ERTEC Poland, Wrocław (Poland)

Research equipment

- Oscilloscope Tektronix TDPO 3034 with current and voltage probes
- Gas chromatograph Agilent 6890N
- Nitrogen oxides analyzer Uras 10B
- FTIR Nicolette spectrometer
- Numerous digital oscilloscopes with measuring equipment