

Intelligent Control for Power Electronics Group
of Industrial Electronics Department
of National Technical University of Ukraine
‘Kyiv Polytechnic Institutė’

The area of research is development of methodology, algorithms, software and hardware for calculation theory of transient and steady-state processes in power electronics devices. Analysis, synthesis and optimization of electronic systems.

Actual interests in educational activity

- Intelligent control in power electronic systems
- Power converters in Smart Grid

Scientific interests

- transient and steady-state processes in power electronics devices
- analysis, synthesis and optimization of electronic systems
- chaotic processes in converters
- control of power consumption processes
- control of the diesel, synchronous generators and stepper motors
- simulation of economic processes and pricing in power and energy systems
- analysis and calculation of the electronic circuits using the method of structural numbers
- planning methods for PLC networks
- methods of renewable sources maximum energy take-off in Smart Grid

Valery Zhuikov, Professor, Doctor of technical sciences. Head of Industrial Electronics Department, Dean of Faculty of Electronics, IEEE Ukraine Section Chair.

Author of more than 250 publications and 50 patents.

Teaching courses: “Factors of Successful Professional Employment”, “Principles of Electronic System Design”.

Research area: calculation theory of transient and steady-state processes in power electronics devices; analysis, synthesis and optimization of electronic systems; deterministic chaotic processes in converters; intelligent control of power consumption processes.

Anna Kyselova, assistant lecturer, PhD.

Teaching courses: “Informatics”, “Internet Technology”, “Computer Technology”.

Research area: semantic web technology, on topic related to ontology and description logic reasoning; decision support system, on topic related to data mining and reasoning; human-computer interaction, on topic related to raw-data processing and context-aware computing.

Author of more than 20 publications.

Ievgen Pichkalov, PhD Researcher, IEEE Ukraine Section Vice Chair.

Projects & Grants:

- “Intelligent Predictive Control System for Stepper Motors in Industrial Application & Educational Laboratories” (Project support by 2013 IEEE Student Enterprise Award for IEEE KPI Student Branch);
- “Audio Transformer Design for Tube Amplifier with Improved Quality and Reduced Cost” (Project support by 2012 IEEE Standard Education Committee Mini-grant #99);
- “Discover Milestones of Ukrainian Science” (Project support by 2013 IEEE Foundation Grant Application #2013-137LMF).

Research area: control of the diesel generators; matrix converters; control of synchronous generators; calculation theory of transient and steady-state processes in devices for power electronics; simulation of economic processes and pricing in power and energy systems; intelligent control of stepper motors.

Author of more than 15 publications.

Dmytro Mykolaets, assistant lecturer, 3^d year PhD student.

Teaching courses: “Devices for Converting Equipment”, “Power Electronic Systems”, “Power supply systems of electronic equipment”.

Research area: reactive power compensator operating modes features; systems of guaranteed power supply with reactive power compensator and accumulator; parallel compensator with narrow load current.

Author of more than 5 publications.

Kateryna Osypenko, assistant lecturer, 2nd year PhD student, IEEE KPI Student Branch Chair, IEEE Ukraine Section Treasurer.

Teaching courses: “Electronic Systems”, “Fundamentals of Automatic Control Theory”.

Research area: analysis and calculation of the electronic circuits using the method of structural numbers; planning methods for PLC networks; power converters in Smart Grid; methods of renewable sources maximum energy take-off in Smart Grid.

Author of more than 7 publications.