

Briefly about Department

Department of Automation and Control in Technical Systems

Web: <http://web.kpi.kharkov.ua/auts>

Faculty of Automation and Instrumentation Design



Founded in 1948, performs both educational and scientific activities. Results of our scientific and practical developments are used in various industries. Our graduates are employed not only in Ukraine but also in companies abroad.



Head of Department:

Prof., D. of Sc., State Prize of Ukraine prizewinner

Petr A. Kachanov

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Member of the Faculty Council member, Member of the University Council, Chair of the Specialized Council for Defending Theses.

Scientometric data : [Scholar](#) / [ORCID](#)

Educational Activity

Department trains Bachelors and Masters of Science in the fields:

- **«Automation and Computer-Integrated Technologies»** (specialty "Computerized Control Systems and Automatics")
- **«Telecommunications and Radio Engineering»** (specialty "Telecommunication Aids in the Information and Computer Systems")

Our students receive a deep theoretical and practical training in a number of disciplines, including both fundamental and human sciences. From the first course our students begin to learn various core subjects, including computer basics, fundamentals of designing algorithms and programming, hardware description languages, fundamentals of electrical engineering, electronics and microprocessor technology. In the later course students get acquainted with the principles of computer graphics and digital signal and image processing, theory of reliability evaluation and assurance for technical systems, the principles of construction of the complex automatic and automated control systems.

Scientific Activity

Over the past 10 years, the department carried out a number of scientific research according to research projects, funded from the state budget and through bilateral agreements with the leading enterprises of Kharkov and other regions of Ukraine.

Among the major developments of recent years are the following:

- **Computer Training System for Armored Vehicles** (State Prize Award 2004)
- **Locomotive Diesel-Electric Trains DEL-02 M Control System** (State Prize Award 2006)
- **Computer Device for Holter Monitoring of Cardiosignals** (Scientific Research Project of Ministry of Science and Education of Ukraine “*Biomedical Images And Signals Processing Methods Research*” SR#0106U001488)



Computer Training System for Armored Vehicles (Driver Cockpit, Processing Server and Trainer Workpost)

Publications

The scientific work results of our stuff, carried out on their own initiative, according to their Ph. D. thesis researches and within the scope of research programs issued in the form of scientific publications, a list of which can be found in the profile of the department on [Google Scholar](#). (see QR-code aside)



Below are the publications on results of research project related with **Computer Training System for Armored Vehicles**:

- Kachanov P.A., Zuev A.A., Vasilchenkov O.G. «The method of construction and visualization of realistic landscapes for armored vehicle simulators» // Information Processing Systems, No. 1 (23), pp. 10-16, -- 2003. ([link](#))
- Kachanov P.A., Zuev A.A. «Methods for calculating the position and orientation of the observer in the visualization systems of armored vehicle training complexes» // Power Saving and Integrated Technologies, No. 2, pp. 159-162. -- 2007. ([link](#))
- Kachanov P.A., Zuev A.A. «Using the methods of calculation of background shading to improve the quality of computer-generated images» // Vistnyk NTU «KhPI», Automation and Control Series, No. 23, pp. 50-53. -- 2010. ([link](#))
- Kachanov P.A., Zuev A.A., Yatsenko K.N. «The amplification unit of operator's brain potentials of training complex» // Vistnyk NTU «KhPI», Automation and Control Series, No. 23, pp. 18-22. – 2015. ([link](#))
- Kachanov P.A., Zuev A.A., Yatsenko K.N. «Space perception analysis in the panini projection and its using in computer graphics» // Eastern-European Journal of Enterprise Technologies, vol. 2, No. 2 (76), p.36-43. – 2015. ([link](#))

Cooperation Offers

Our department is trying to follow up with the times and constantly search for new directions for research. After reviewing the research topics and trends, which are carried out at your university, we are interested in the opportunity to establish mutually beneficial cooperation with following of your departments :

Faculty of Electrical Engineering and Information Technology

- *Institute of Electrical Systems* (Department of Electrical Networks and Renewable Energy (LENA))
Prof. Dr.-Ing. habil. Martin Wolter
Cooperation in field of Energy Conversion from Renewable Sources
- *Institute of Automation Technology* (Department of Integrated Automation)
Prof. Dr.-Ing. Christian Diedrich
Cooperation in field of Devices and Processes for Control Engineering
- *Institute of Information and Communication Technology* (Department of Hardware-Oriented Technical Computer Science)
Prof. Dr.-Ing. Thilo Pionteck
Cooperation in field of Modern approaches in System-on-Chip and Network-on-Chip paradigms, especially related to Reconfigurable Hardware Cryptography (Secure Systems and Networks on Chips)

Contacts

If you are interested in reciprocal cooperation and want to qualify any details, this contact information would be useful:

head of a Department:

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