COURSES OFFERED FOR ACTIVE PROJECT

BY NATIONAL TECHNICAL UNIVERSITY OF UKRAINE "KIEV POLYTECHNIC INSTITUTE" (www.kpi.ua)

DEPARTMENT OF AIRCRAFT AND SPACE SYSTEMS

(www. http://faks.kpi.ua/)

AIRSPACE ENGINEERING – AVIONICS

MS Degree Programme

Mathematical methods of simulation and system analysis

Optimal, adaptive, robust, digital control

Design of microprocessor systems (CAD-CAM)

Navigation systems

Control systems

Information technology of aerospace systems

Modern technologies of navigation and control

Computer aided methods of aircraft systems design

Intelligent control systems

Design and optimization of aircraft systems

Special topics of modern automatic control theory

Language of study: Ukrainian, Russian and partially English

Bachelor/Master/PhD Thesis, PhD and Postdoctoral researches

Language of study: Ukrainian, Russian or English

Main Directions of Researches:

Design and investigation of intellectual unmanned (robotics) systems and moving vehicles of different types including UAVs.

AIRSPACE ENGINEERING - AIRCRAFTS AND HELICOPTERS

MS Degree Programme

Algorithms for modeling of aircraft elements.

Algorithms for assembling of finit element models.

Object-oriented programming and creation of database

Gas Dynamics

Design and optimization of aircraft systems

CAD, CAM, CAE

Exchange of data in the design systems.

Algorithms and data exchange interfaces.

Methods of calculation of aircraft loads

Modern Scientific Researches in the Branch

The dynamics of mechanical constructions

Computer methods of aircraft systems design

Language of study: Ukrainian, Russian and partially English

Bachelor/Master/PhD Thesis, PhD and Postdoctoral researches

Language of study: Ukrainian, Russian or English

Main Directions of Researches:

Computer-aided design (CAD), computer-aided manufacturing (CAM) and computer-aided engineering (CAE) of flying vehicles of different types.

DEPARTMENT OF CHEMICAL TECHNOLOGY

(www. http://xtf.kpi.ua/)

CHEMICAL TECHNOLOGY

Bachelor's Degree Programme

Physical chemistry

Surface phenomena and disperse systems

Language of study: Ukrainian, Russian, English

Master's Degree Programmes

Chemical Technology of Inorganic Compounds Programme

- Technology and equipment of drinking and technical water obtaining
- Chemistry, technology and equipment of non-organic sewage water purification

Chemical Technology of Polymer and Composite Materials Processing Programme

- Resource-saving and raw materials of silicate productions
- Chemical technology of composites based on binding

Language of study: Ukrainian, Russian

Bachelor/Master/PhD Thesis, PhD and Postdoctoral researches

Language of study: Ukrainian, Russian or English

Main Directions of Researches:

- Theoretical modeling and development of molecular energy storage systems - supercapacitors; Physical chemistry of nonaqueous solutions; Physical and chemical analysis of liquid systems; Kinetics and mechanism of covalent bond heterolysis; Physical and chemical processes on the surface of metal and development of corrosion protection facilities.
- Water treatment and water purification; Scientific and technological basis of the synthesis of sorbents, coagulants, flocculants, new classes of catalysts as well as inorganic and organic synthesis, petrochemicals, ecological catalysis
- Resource-saving and raw materials for silicate production; Creation and development of complex technologies for environmentally friendly composite coatings and materials using secondary products; Research in chemistry and technology of inorganic binders (cement) and their application fields.

DEPARTMENT OF ELECTRONICS

(www. http://fel.kpi.ua/)

ELECTRONIC ENGENEERING, TELECOMMUNICATIONS
MSC, BSc Degree Programmes

Design in electronics

Theory of information and digital signal processing

Theory of automatic regulation and control

Electronic systems of regulation and control

Fundamentals of Nanoelectronics

VLSI design

Sensors design

Micro & Nanoelectromechanical Systems

Physics of Dielectrics

Microwave Engineering

Biomedical signal processing with applications

Digital Signal Processing

Theory of electro-magnetic field

Calculus mathematics (Numerical methods)

Devices of digital electronics

Solid State Electronics

Physics of electronics processes

Introduction to the technique of measuring

Theory of electric circuits -1,2

Electro-, radio- and acoustic materials

Acoustic equipment of studios and apartments

Electro acoustic devices

Personal computers and bases of programming

Applied mechanics

Theory of processes and systems

Probabilistic bases of data processing

Technical electrodynamics and radio waves propagation

Power supply of electronic devices

Theory of telecommunications

Bases of microprocessor technique

Electromagnetic compatibility of radiofacilities

Broadcast systems and networks

Quantum electronics

Technological foundations of electronics

Language of study: English

Bachelor/Master/PhD Thesis, PhD and Postdoctoral researches

Solid State Electronics, Applied Acoustics and Sound Technique, Semiconductor Power Converters, Medical Instruments and Systems, Computer Systems and Components, Vacuum, Plasma and Quantum Electronics

Language of study: English, Ukrainian or Russian

Main Directions of Researches:

Physical properties of dielectric, semiconductor and nano- materials and their applications; radioelectronic, acoustic, power electronic, biomedical devices and systems investigation and design; digital radio- and biosignals processing.