About KPI

National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute” (KPI) was founded in **1898**. Over the period of its existence it has trained **370** thousand of specialists.

KPI is one of biggest educational establishments in Europe. It trains **25** thousand of students, postgraduates; doctorates as well as foreign student from neighbouring and far abroad countries.

University has **14** faculties, **11** educational and scientific institutes, several scientific and research institutes and educational centers. It trains Bachelors, Specialists and Masters, PhD and Doctors of Science. It employs more than **500** professors and over **1300** associate professors.

KPI ranks **4%** of the best universities of the world according to the international rating QS and Webometrics.It annually holds the highest positions among the best higher educational establishments of Ukraine – “Compass” and “TOP-200 Ukraine”.

According to Google Corporation, it is the most popular higher educational establishment of Ukraine during the last years.

KPI mission

To make a significant contribution to sustainable development of society through internalization and integration of education, research and innovation development. To provide conditions for all-round professional, intellectual, social and creative development at the highest levels of excellence in education and research area.

KPI Team

Mykhailo Ilchenko
academician, professor
KPI team leader, PPD

Project Tasks:
1.Coordination of joint research with FTMC and IGIC
2.analysis of obtained results related to the experiments;
3.discussion of the results obtained by other partners involved into the project and participation in preparation of joint articles and other outputs.
4.Participation in joint meetings of researches involved into the project.

Hlib Avdieienko
Ph.D, associate professor

Project tasks:
1. Microwave rectennas design, manufacturing and testing

Alex Zhivkov
Ph.D, associate professor

Project tasks:
1.Metamaterial structures and cells analysis
2. design of 3D metamaterial antenna based on DR for rectennas application

Igor Trubarov
Ph.D, associate professor

Project tasks:
1. Microwave antennas topologies analysis and design for rectennas

Kostiantyn Shevtsov
Young researcher, postgraduate student

Project tasks:
1. Computer simulation of microwave antennas based on DR&MSR

Roman Kamarali
Young researcher, assistant

Project tasks:
1. Computer simulation of matching circuits of microwave antennas

KPI tasks:

WP1 "Management"

1.1 Strategic scientific coordination (with FTMC)
1.2 Day-to-day management (with FTMC)

WP2 "Development of dielectric resonator rectenna"

2.1 Research for the best dielectric resonator antenna design (with FTMC)

WP3. "Dielectric resonator rectenna fabrication and characterization"

3.1 Impedance matching circuits design. Matching and rectifier circuits testing for proposed dielectric resonator antenna (with FTMC)
3.3 Testing and characterization of manufactured rectenna (with FTMC)
3.4 Electromagnetic field sensor design and testing (with FTMC)

WP4. "Dissemination, Public Outreach, Exploitation and Transfer of Knowledge"

4.3 Dissemination and transfer of knowledge

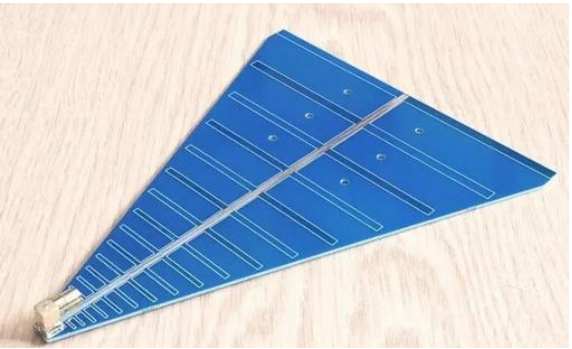
KPI team tasks in the project

Simulation of new cells of metamaterials, studying their properties and microwave antennas based on the cells of metamaterials for energy harvesting and electromagnetic sensing.

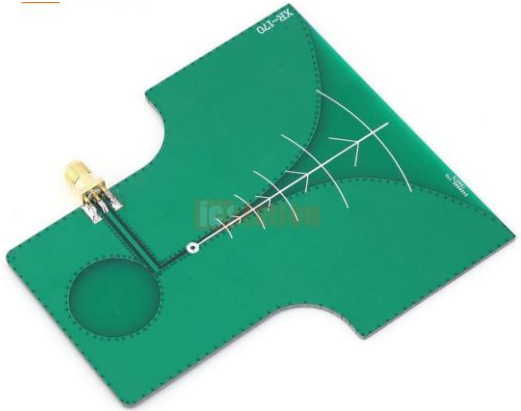
Available measurement equipment of KPI

Microwave antennas

Log-periodic: 0,8 – 6 GHz



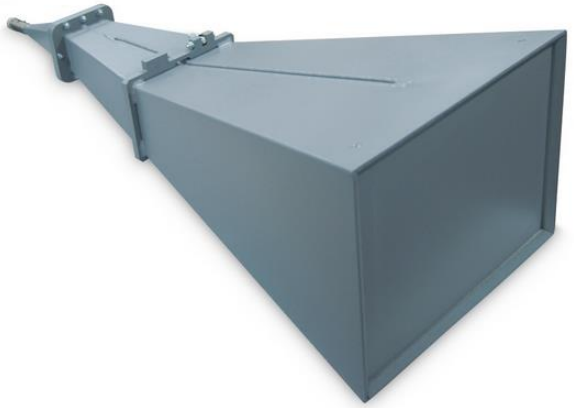
Wideband planar: 1,4 – 10,5 GHz



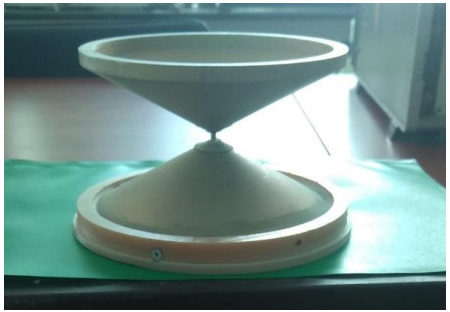
Wideband planar: 0,73 – 6,5 GHz

Pyramidal horn: 2 – 5,64 GHz

Wideband horn: 0,85 – 17,4 GHz



Biconical: 0,6 – 6 GHz



Signal Hound tracking generator TG44A and spectrum analyzer SA44B (up to 4.4 GHz)

TG44A tracking generator key features:

Operating frequency range : **10 Hz... 4.4 GHz**
Frequency stability: **± 1ppm**
Frequency grid step: **19 options from 10 Hz to 10 MHz**
The amplitude of the output signal is **-30 dBm...-10 dBm**
The accuracy of setting the amplitude is **±2 dB**
Amplitude setting step **1 dB**
Frequency resetting speed 700 counts/s (in combination with USB-SA44B)
The level of spurious oscillations **< - 10dBc**

SA44B spectrum analyzer key features:

Operating frequency range: **10 Hz... 4.4 GHz**
Frequency resolution: **0.1...250 kHz, 5 MHz**
Dynamic range: **-151...+10 dBm**
A low-noise amplifier is available at frequencies **> 500 kHz**
Measuring receiver with a large dynamic range of **0 dBm... -125 dBm (150 kHz - 1 GHz), 0 dBm… -115 dBm (1 GHz – 4.4 GHz)**
The accuracy of measuring the amplitude of AM and FM signals is 1% AM / FM / SSB / CW audio demodulator in real time