



# National Technical University Kharkiv Polytechnic Institute



## Applied Physics Faculty



Department of  
“Materials for electronics and  
solar cells”





Specialty

“Micro- and nanosystem technology”

Specialization

“Micro- and nanosystem equipment for solar power”

Qualification

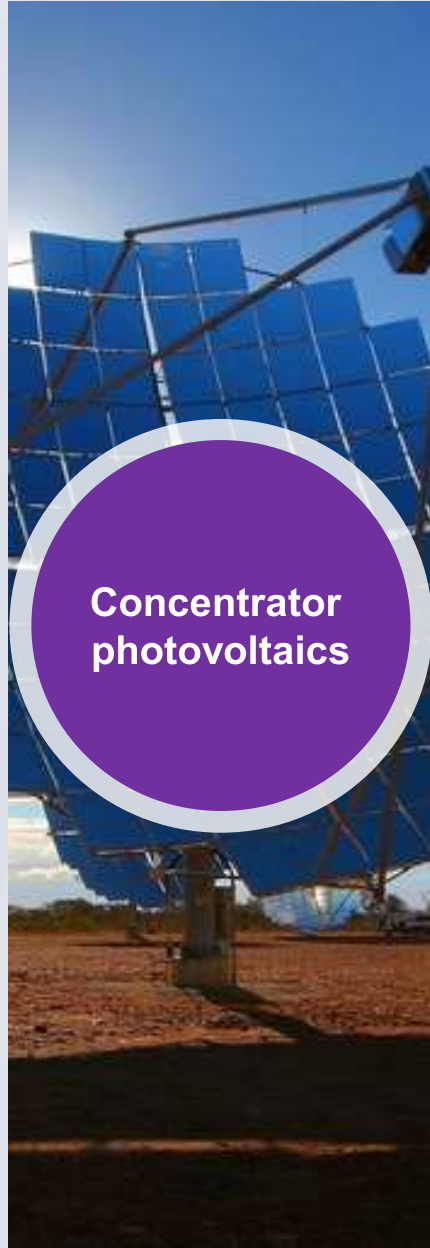
Bachelor/Master of micro- and nanosystem technology



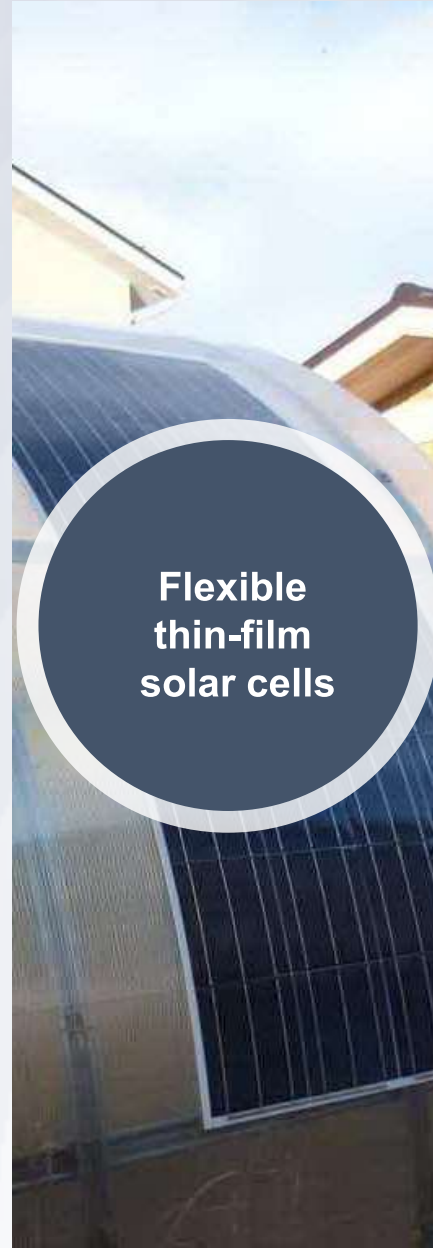
# Areas of studying



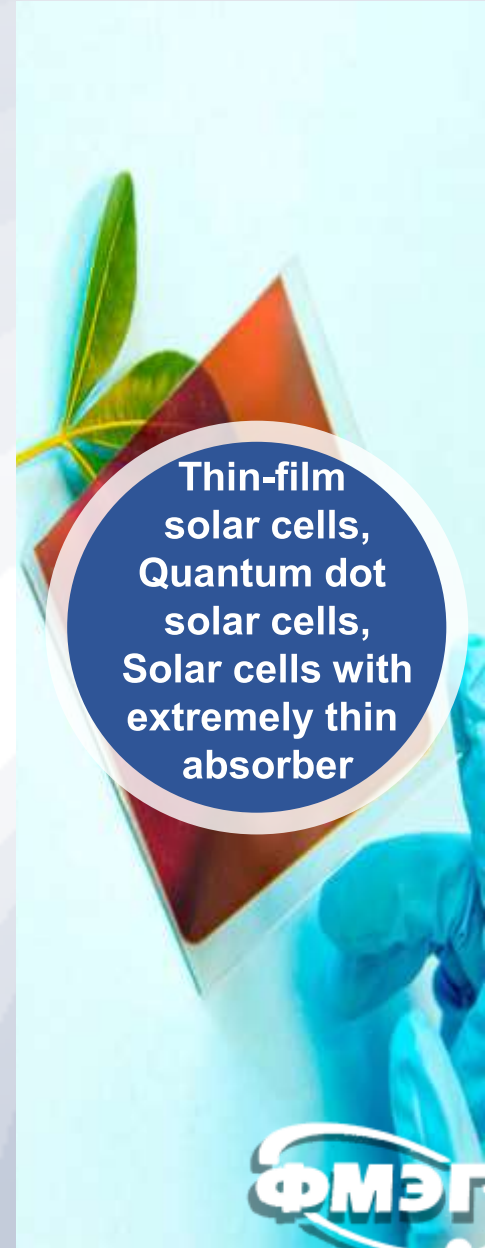
Solar energy  
and its application



Concentrator  
photovoltaics



Flexible  
thin-film  
solar cells

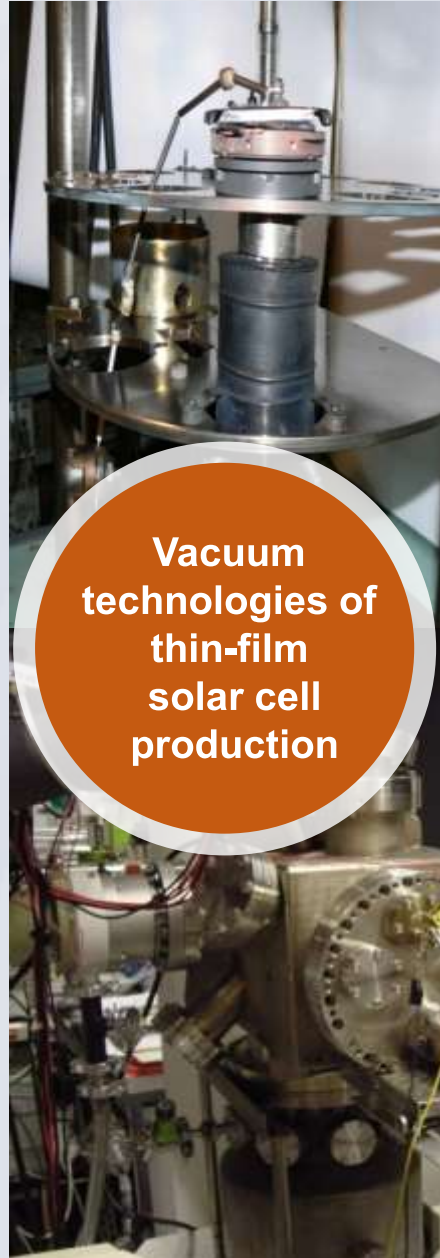


Thin-film  
solar cells,  
Quantum dot  
solar cells,  
Solar cells with  
extremely thin  
absorber

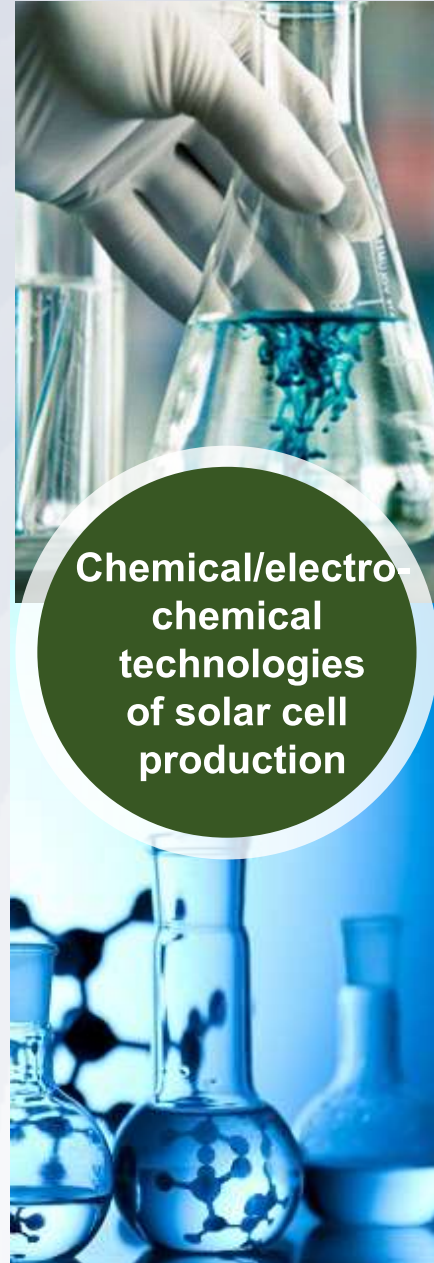
# Areas of studying



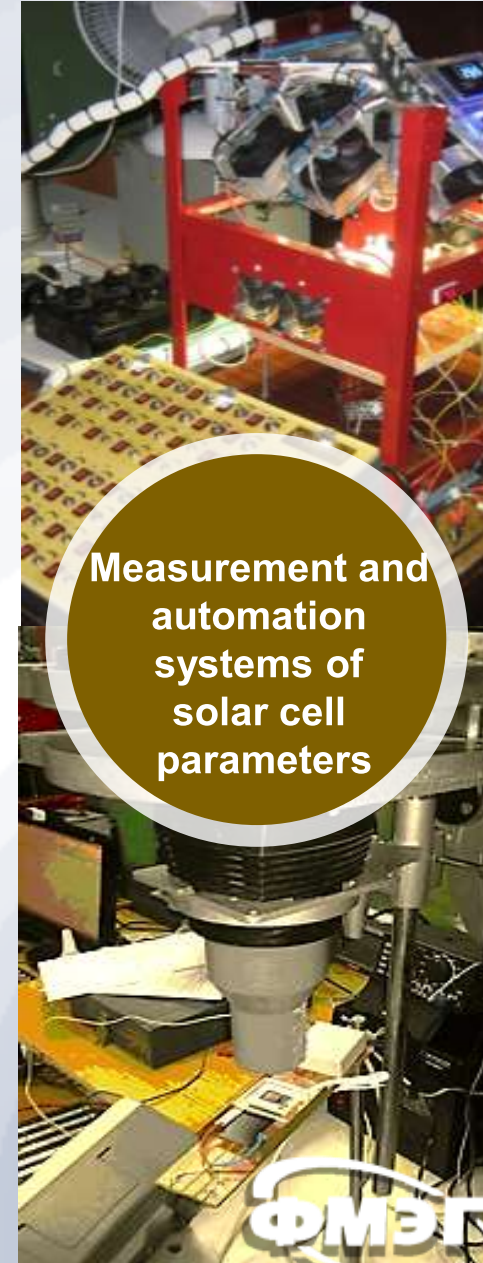
**Thermal  
solar  
collectors**



**Vacuum  
technologies of  
thin-film  
solar cell  
production**



**Chemical/electro-  
chemical  
technologies  
of solar cell  
production**



**Measurement and  
automation  
systems of  
solar cell  
parameters**



# Employment perspectives

Our graduates work in state-owned enterprises on positions of a **junior researcher, engineer, technologist**:

- Instrument-Making Research Technological Institute (Kharkiv);
- Public joint-stock company “Turboatom” (Kharkiv);
- State Scientific Institution “Institute for Single Crystals” of National Academy of Sciences of Ukraine (Kharkiv);
- Public joint-stock company “Poltava Diamond Tools”;
- State enterprise plant “Electrotyazhmash” (Kharkiv);
- V.E. Lashkaryov Institute of Semiconductor Physics NAS of Ukraine
- National Academy of Sciences of Ukraine (Kyiv);
- Kharkiv State Aircraft Manufacturing Company (Kharkiv).
- companies that provide services for the design, installation, repair and maintenance of equipment for alternative energy: solar collectors, solar panels.



# Employment perspectives

Some graduates elect postgraduate course of study in Ukraine or abroad

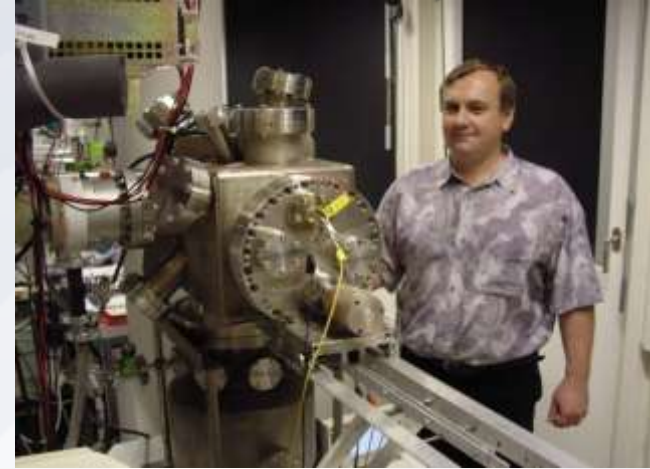
**Finland**  
**(Helsinki)**



**Germany**  
**(Stuttgart)**



**Switzerland**  
**(Zurich)**



**Sweden**  
**(Stockholm)**



**Canada**  
**(Vancouver)**



**France**  
**(Chambery)**





# General academic disciplines (bachelor's level)

Chemistry Of Materials and Phase Transformations

Crystal Structure of Solids

Quantum Mechanics

Methods of Investigation of Material Structure

Solid State Physics

Numerical Methods in Physical Electronics

Physics of Semiconductors and Dielectrics

Materials of Micro- and Nanoelectronics

Optoelectronic Devices

Vacuum Technique

Chemical Technologies of Microelectronics

Electronic Defects in Semiconductor Materials

Physical Research Methods Of Semiconductor Materials

Technological Basics of Electronics

Theory of Electrical Circuits

Measurement and Processing of Experiment Results

Fundamentals of Nanoelectronics

Physics of Semiconductor Devices



# General academic disciplines (master's level)

Recent physical problems of electronics

Products of micro- and nanoelectronics

Physical bases of technologies of micro- and nanoelectronics

Physical material science of micro- and nanoelectronics





# Equipment of chair



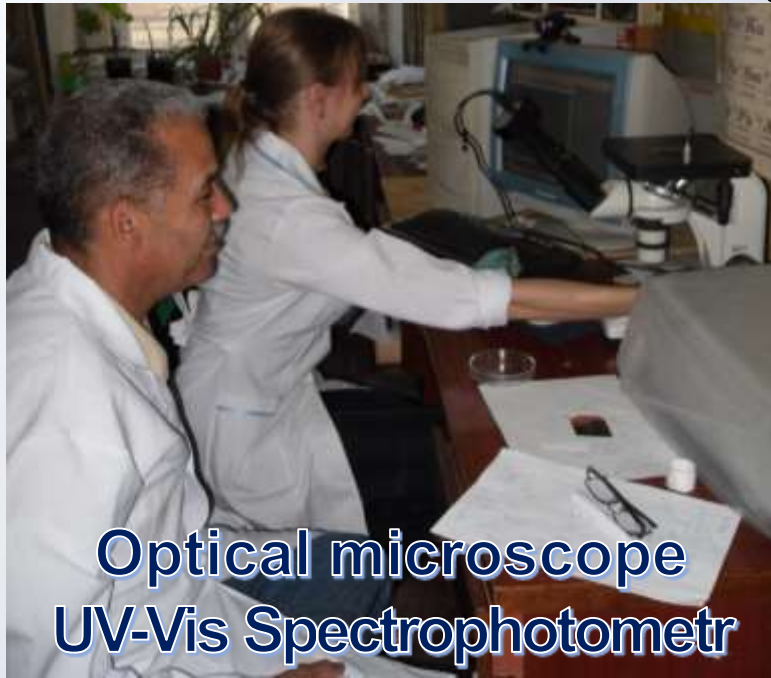
Equipment for vacuum deposition of thin films



Equipment for chemical and electro-chemical deposition



# Measuring equipment of chair





## Department's staff



- Vice-rector, Prof., Dr. Khrypunov Gennadiy
- **Materials of micro- and nanoelectronics**



- Dean, Associate professor, Ph.D. Kudiy Dmitro
- **Methods of investigation of material structure**



- Acting Head of the Department, Associate professor, Ph.D. Zaitsev Roman
- **Optoelectronic devices**
- **Physics of semiconductors and dielectrics**



- Senior researcher, Associate professor, Ph.D. Meriuts Andriy



- Associate professor, Ph.D. Klochko Natalya
- **Physical bases of technologies of micro- and nanoelectronics**
- **Chemical technologies of microelectronics**



- Senior researcher, Associate professor, Ph.D. Kopach Volodymyr
- **Products of micro-and nanoelectronics**
- **Electronic defects in semiconductor materials**



- Senior researcher, Ph.D. Kirichenko Mychaylo
- **Technological basics of electronics**
- **Physics of semiconductor devices**



- Associate professor, Ph.D. Fedorin Ilyya
- **Measurement and processing of experiment results**
- **Materials of micro-and nanoelectronics**



- Researcher Kharchenko Mykola
- **Vacuum technique**

Our contacts:

