



http://en.misis.ru/academics/masters-english/solar-energy/

MATERIAL SCIENCE & TECHNOLOGY

Science and Materials of Solar Energy Master's Programs in English



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Challenges

- Growing demand for alternative energy sources due to the depletion of mineral fuel resources and their negative impact on the environment
- Growing demand for portable power sources to enable the operation of mobile devices for a long periods of time
- Growing demand for materials with new properties

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General information





Collaboration with industrial partners:



Transparent carbon films Development of joint technological solutions



Poly – Si solar

Development of joint technological solutions



Development of Solar roof prototypes





Collaboration with scientific partners:





New LAB plan: 110 м²

- Glovebox lines;
- Roll to roll printing equipment;
- Full complex of opto electrical and stress test equipment.





NUST MISIS Master's degree program in English



- Harvesting the sun's abundant energy is the future solution of global energy problems
- The program aims to develop the next generation of specialists in the field of Solar Energy
- Applied and relevant industrial knowledge
- High future demand and employability
- Interdisciplinary program which covers science, technology, legal issues, economics, and public involvement

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Science and Materials of Solar Energy Master's Programs in English

Background:

- materials science
- electronics
- physics
- mathematics
- computer science
- chemistry

Courses:

- Fundamentals of Photovoltaics
- Photovoltaic materials
- Solar Energy Systems Design and Construction
- Solar Cell Technology Fundamentals
- Nano-scale Photovoltaics
- Technology of Solar Panel Manufacturing

and other



Scientific work & practice

- Conference
- Internship
- Publication





From materials to energy systems ⁸ Science-Technology-Development-Maintenance





Title of master degree thesis – better understanding of what we are doing

N⁰	NAME	THESIS
1	Iwe Idorenyin Asuquo	Anti-glare coatings based on gradient-porous structures
2	Muhammad Ali	Porous Silicon Photo-electrodes for Hydrogen Production Through Photo- electrochemical Process
3	Waheed Sayed Ahmad Nawid	Method of Increasing Radiation Hardening on Solar Cells Materials
4	Shehak Sattar	Charge pumps in the photovoltaic structure
5	Kathindi Tshetulimba	Sun tracking system and calculation for Heterojunction with intrinsic thin layer (HIT) solar cells
6	Oscar Kwame Segbefia	The behavior of silicon solar cells sputtered with silica nanoparticles
7	Ramezankhani Vahid	Optimization of perovskite solar cells for perovskite\ silicon tandem solar cell
8	Amintorabi Mansour	Calculation and modeling of "smart solar module" system
9	Awad Elgaily Abdalla Mohamed	Porous silicon as an anti-reflective coating for silicon solar cells

N⁰	NAME	THESIS
1	Caturanz Maxim	Effect of thermal treatment on structure and functional properties of superelastic Ti-18Zr-14Nb (at.%) alloy produced by laser powder bed fusion.
2	Brait Mvin	Supersaturated solution formation during diffusion process. Experiments and thermodynamic modelling.
3	Hamuqaya Jenipo	Peculiarities of diffusion processes and phase formation in AI-Cu system
4	Chiza Leonard Njrenda	Influence of silicon nanoparticles on the operating temperature of a standard monocrystalline solar cell.
5	Njadera Daniel Goembe	Integration of Renewable Energy Systems into the Kenyan Electric Power Network.
6	Mvandiingy Ferdinand Nande	Characteristics of nanoporous silicon by anodic etching.
7	Calipy Lucia	Optical investigation of Si/SiOx nanoparticles on solar sells.
8	Asebiya Dominick Qujoe	Study of hysteresis effect in inverted perovskite solar cells with different hole transport layers.
9	Weylu Paulus Shitaleny	Photovoltaics effect in ferroelectric thin- film structures based on PZT

Our graduates



Name	Comes from	Position	
Sayed Ahmad Nawid Waheed	Afghanistan	PhD	Kabul, Afga
Oscar Kwame Segbefia	Ghana	PhD	University o
Vahid Ramezankhani	Iran	PhD	Scooltech, I
Tshetulimba Kathindi	Namibia	Teacher	University o
Idorenyin Asuquo Iwe	Nigeria	PhD	The Hong K Technology
Muhammad Ali	Pakistan	PhD	University o
Shehak Sattar	Pakistan	PhD	RUDN, Rus
Mwandingi Ferdinand Nande	Namibia	PhD	University o
Weyulu Paulus Shitaleni	Namibia	PhD	University o
Nyirenda Chiza Leonard	Zambia	Engineer	Mopani Min
Asebiah Dominic Cudjoe	Ghana	PhD	University o
Kalipi Lusia	Namibia	PhD	University o
Nyandera Daniel Gombe	Keniya	Engineer	Kenya Pow
Hamukwaya Djenipo	Namibia	PhD	NUST MISi
Hu Min En	Taiwan	Engineer	FOXCONN

Janon	Organization
nD	Kabul, Afganistan
nD	University of Vaasa, Finland
nD	Scooltech, Russia
acher	University of Namibia
nD	The Hong Kong University of Science and Technology
D	University of Warsaw, Poland
D	RUDN, Russia
nD	University of Namibia
nD	University of Namibia
ngineer	Mopani Mines
nD	University of Toronto, Canada
nD	University of Namibia
ngineer	Kenya Power
nD	NUST MISIS

