Anna Novoseltseva

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EDUCATION

2016-2018 **Master of Science**
GPA: 3.9/4.0
Biomedical Engineering
Worcester Polytechnic Institute

2011 – 2015 **Bachelor of Science**
GPA: 4.8/5.0
Biotechnical Systems and Technologies
Tomsk Polytechnic University

RESEARCH EXPERIENCE

JAN 2017 - AUG 2018
Worcester Polytechnic Institute, Worcester, MA, USA
Master's thesis

Designed, prototyped, and tested a three-axis force measurement device for the da Vinci surgical system to provide haptic feedback to the operator based on forces applied to the instruments. Designed electronics and analog control circuits. Developed a ROS package to interface with the da Vinci Research Kit.

AUG 2014 – DEC 2016
Tomsk Polytechnic University, Tomsk, Russian Federation
Bachelor's thesis

Designed and developed electronic circuits of a device for determining the location of hematomas using infrared spectroscopy. Programmed microcontroller STM32 in C for device control. Created a program for data analysis and acquisition using LabVIEW. Implemented RS232 serial communications between PC and developed device.

PROFESSIONAL EXPERIENCE

CURRENT, FROM SEPT 2018 (FT)
NTO IRE Polus, Fryazino, Russian Federation
Engineer

Designed and implemented the full-scale manufacturing process for a new medical laser treatment product. Responsible for component quality assurance, inventory database development, and design of assembly line process equipment.

SUMMER 2017, 2018 (FT)
IPG Medical, Marlborough, MA, USA
Internship

Research, development, and testing of new medical laser system for dermatology. Conducted laser-tissue interaction experiments with biological tissue samples and phantoms.

SUMMER 2014 (PT)
Medtekhnika, Ulan-Ude, Russian Federation
Internship

Assisted in technical support and repair of medical equipment in hospitals and clinics.

AWARDS

2016 - 2018 Fulbright Scholarship

2015 1st team place in All-Russian Student Competition on Electronics

2014 1st team place in the regional stage in All-Russian Student Competition on Electronics

COMMUNICATION SKILLS

CONFERENCES Oral Presentation at the Annual MIT Theoretical Physics Conference – 1987

POSTERS Poster at the Meeting of the American Physical Society – 1985

SKILLS

Programming Languages

C • Matlab • Python • ROS • LaTex • Visual Basic • C#

Physical Dexterity

Manual manipulation of experimental equipment and training within Black Mesa (e.g. the Hazard Course) have contributed to an enjoyment of working with my hands.

Passionate

I have been interested in theoretical physics such as quantum mechanics and relativity from an early age. My education and research have cemented this interest into a passion. I greatly enjoy carrying out fundamental physics research with potential practical applications.

PUBLICATIONS

Novoseltseva A. (2018). "Force Feedback for the Patient Side Manipulator of the daVinci Research Kit", *Masters Theses (All Theses, All Years)*, https://digitalcommons.wpi.edu/etd-theses/312

Yaroslavsky I., Vinnichenko V., McNeill T., **Novoseltseva A.**, Perchuk I., Vybornov A., Altshuler G., Gapontsev V. (2018). "Optimization of a novel Tm fiber laser lithotripter in terms of stone ablation efficiency and retropulsion reduction" *Proc. SPIE 10468, Therapeutics and Diagnostics in Urology 2018*, 104680H doi: 10.1117/12.2291089;

Novoseltseva A., Aristov A., Timchenko K. (2016). Experimental Facility Control System for Optical Studies in the Frame of Problem Solving of Brain Hematoma Diagnostics, *IOP Conference Series: Materials Science and Engineering*,, Vol 93, No 012002, pp 1-5.

Novoseltseva A., Aristov A., Timchenko K. (2016). Experimental Facility Control System for Optical Studies in the Frame of Problem Solving of Brain Hematoma Diagnostics, *IOP Conference Series: Materials Science and Engineering*,, Vol 93, No 012002, pp 1-5.

Novoseltseva A., Musorov I., Torgaev S., Aristov A., (2016). The Control System of the Opotoelectronic Sensor, *IV International Forum for Young Scientists "Space Engineering"*, pp 262-265.

Aristov A., Timchenko K., **Novoseltseva A.**, Kustov D., Larioshina I., (2016). Designing of Phantom Head Used in Optical Diagnostics of Brain Injury, *Journal of Physics: Conference Series*, Vol 671, No 012002, pp 1-5.

Timchenko K., **Novoseltseva A.**, Aristov A., (2016). Research of the Methods for Reading Optical Density on Different Parts of Human Head, *IV International Forum for Young Scientists "Space Engineering"*,pp 272-277

Timchenko K, Novoseltseva A, Aristov A, (2015). Designing of Phantom Head for Conducting Optical Researches, *Atomic and molecular pulsed lasers : The 12th International Conference*,pp 132

1996 **doi:10.1021/jp951483+**

1990 **doi:10.1139/p90-097**

1986 doi:10.1139/v86-297

1986 doi:10.1103/PhysRevA.34.2329

First author publications in **bold**