Mukhammaddin Zinaddinov (MZ)

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- PhD graduate in Electrical Engineering with 3.8 GPA (out of 4), UMass Lowell.
- 2+ years of industry experience in Analog and Power Design Electrical Engineer

Skills

- **Electronics Lab Equipment Experience** (2-3 years) as a TA. Good knowledge and handling of lab equipment, i.e. oscilloscopes, power supplies, multimeters, and function generators.
- Experience working in **LTSpice, MATLAB, ALTIUM, Multisim, ANSYS, SolidWorks,** and **SILVACO**.
- Experience working with **C**, OOP and scripting languages: **Python, C++, Java, Swift**.
- **Semiconductor Knowledge** – solid state electronics background, experience in design of transistors and solar cells, familiar with fabrication defects, have clean room experience.
- Manufacturing – MVP **prototype bring-up** experience of solar electric kart, solar lawnmower, solar tracking system, and analog synthesizer projects.
- **Cross-Discipline Collaboration & Teamwork** - worked on High-Power GaN Transistor Thermal Model (EE & ME), Light-Weight Solar Panel Design and thermal stress analysis (EE & Plastics E.), Solar Tracking System (EE & ME), and Solar Elec. Vehicles (EE & ME).
- **Involved & Self-Starter** – volunteered as an Electronics Shop Co-Captain in a local non-profit MakerSpace. I work on a lot of hobby engineering projects: https://www.masa8g.com/projects

Education

University of Massachusetts Lowell, **PhD** in Electrical Engineering (Solar Energy and Power Electronics)
GPA 3.81, 09/01/2017 - 02/01/2020.
University of Massachusetts Lowell, **B.S**. in Electrical Engineering
GPA 3.78, 09/01/2014 - 05/2017.

Work Experience

Analog Devices Inc, LTspice Modeling Engineer   11/2020 – present
- Developing LTspice models for ADI's new and existing power products line.
- Automating modeling process using MATLAB. Wrote a livescript to automate converter compensation tuning for voltage-mode and current-mode controlled converters, PLL dynamic response, oscillator modes.
- Wrote a Python script to do 20 hour mundane work in less than a minute.

Diagnosys Test Systems Inc, Senior Applications Engineer   04/2020 – 11/2020
- Developed a functional test strategy for HV train propulsion inverter.
- Designed analog and digital boards for the new product line of consolidated benchtop test equipment (CBTE) in Altium designer.

UMass Lowell, Research & Teaching Assistant   09/2014 – 1/2020
- Was involved in around 15 projects over the 5 years resulting in 8 co-authored publications and a patent application.
- My Ph.D. thesis was on "Design of Efficient Solar Panels and Tracking/Antitracking System for Integration with The Grid."
- As a TA helped students identify problems with their circuits and provide necessary theoretical background to guide students in their solutions and debugging. Taught students to work with lab equipment. Some projects are listed in my portfolio: www.masa8g.com/projects

Other

- Recent hobby: electrocaloric cooling effect. There is a relationship between entropy, internal energy, and temperature that can be utilized based on electrocaloric properties of dielectric materials to achieve cooling. I am currently anodizing aluminum plates in my back yard to make custom capacitors and assemble a prototype that achieves dT=5C in 1 hour.
- An article by *The Steppe* (in Russian), a popular Kazakhstani magazine, featuring the youngest PhD in Kazakhstan. Look who is on the picture! https://the-steppe.com/lyudi/samyy-molodoy-doktor-nauk-v-kazahstane-muhammaddin-zinaddinov-o-svyazi-fiziki-s-filosofiey-vliyanii-kultury-na-nashi-deystviya-i-tyage-na-rodinu