

# NAZLI TURAN

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## EDUCATION

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**University of Notre Dame** Notre Dame, IN  
*PhD* Aerospace and Mechanical Engineering Expected December 2021  
Dissertation: *Development and Characterization of Atmospheric Pressure Plasmas for Plasma-Surface Interactions*

**University of Notre Dame** Notre Dame, IN  
*Graduate Minor* History and Philosophy of Science Expected December 2021

**Bogazici University** Istanbul, Turkey  
*MS* Mechanical Engineering January 2017  
Thesis: *Experimental Investigation of the Effects of Cathode Position on HK40 Hall Effect Thruster Performance and Cathode Coupling*

**Bogazici University** Istanbul, Turkey  
*BS* Mechanical Engineering June 2014  
Honors Certificate

## PROFESSIONAL EXPERIENCE

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**Idaho National Laboratory** Idaho Falls, ID  
*Internship at Nuclear Science & Technology (NS&T) Directorate* March 2021 – Present

- Conducted plasma characterization tests of a plasma jet printer system.
- Collaborated on the optimization process of colloidal inks for *in-situ* printing and sintering

**University of Notre Dame** Notre Dame, IN  
*Graduate Research Assistant in Go Research Group* August 2017 – Present

- Designed plasma systems to reveal and identify the characteristics of room temperature, atmospheric pressure plasmas interacting with surfaces.
- Conceptualized an atmospheric pressure plasma jet for low temperature sintering of aerosol jet printed thin films.
- Developed a mm-scale helical surface dielectric barrier discharge for studying plasma-driven chemical kinetics.

**Bogazici University** Istanbul, Turkey  
*Research Assistant at Space Technologies Laboratory* September 2014 – January 2017

- Built and characterized a 40 mm diameter Hall effect thruster, HK40, equipped with a coaxial hollow cathode for electrical propulsion.
- Investigated the pathways of electrons in the presence of electric and magnetic fields to reveal the differences of operations inside a vacuum tank and free space.

**Aselsan** Ankara, Turkey  
*Internship at Mechanical and Optical Design Department* July 2013 – August 2013

- Accomplished a fluid dynamics project by using GAMBIT and FLUENT.
- Collaborated on high-speed camera testing of missiles.

**Turkish Engine Industry (TEI)**

Eskisehir, Turkey

*Internship at Technology Development Department*

June 2013 – July 2013

- Involved in quality control inspection on manufactured jet engine blades.

**Arcelik Group**

Eskisehir, Turkey

*Internship at Research and Development Department*

July 2012 – August 2012

- Studied on various designs of compressors in refrigerators.
- Involved in lifetime testing of refrigerators.

**LEADERSHIP & SERVICE**

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**Leadership Advancing Socially Engaged Research (LASER)**

August 2020 – Present

- Mentored a high school student in learning how to do research and adapting her skills for a project focusing on generating high energy – low-cost plasmas utilizing piezoelectric crystals.
- The student has received a blue ribbon/first place award as well as the ND Energy - Top Junior Energy Related Award.

**Association of Women in Science (AWIS), Leadership**

November 2018 – February 2020

- Mentored 2 female undergraduate students in Science Business and Aerospace and Mechanical Engineering departments through 1-1 consultations, career exploration events, and outreach activities.

**Notre Dame International Summer Student Program, iSure**

May 2018 – July 2018

- Mentored 1 student from Indian Institute of Technology, Bombay, India through lab practices resulting in a paper published in a high-end journal (Journal of Physics D: Applied Physics).

**TECHNICAL SKILLS**

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**Computer Skills:** MATLAB, C (programming language), SpecAir, COMSOL Multiphysics, ANSYS FLUENT, GAMBIT, LabVIEW, Solid Works, Siemens NX, Origin, LaTeX

**Languages:** English, Turkish

**SELECTED PUBLICATIONS & PATENTS**

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- Turan, N., Saeidi-Javash, M., Chen, J., Zeng, M., Zhang, Y. and Go, D.B., “Plasma Jet Sintering Apparatus and Process”, 2021. (patent application – under review).
- Turan, N., Barboun, P. M., Nayak, P. K., Hicks, J. C. and Go, D. B. “Development of a Small-scale Helical Surface Dielectric Barrier Discharge for Characterizing Plasma–Surface Interfaces”. Journal of Physics D: Applied Physics 53, 275201, 2020.
- Herrera, F. A. Brown, G.H., Barboun, P.M., Turan, N., Mehta, P., Schneider, W.F., Hicks, J.C. and Go, D.B., “The Impact of Transition Metal Catalysts on Macroscopic Dielectric Barrier Discharge (DBD) Characteristics in an Ammonia Synthesis Plasma Catalysis Reactor”, Journal of Physics D: Applied Physics 52, 224002, 2019.
- Kurt, H., Turan, N., Kokal, U., Celik, M. “Note: Coaxial-heater Hollow Cathode”, Review of Scientific Instruments, Vol. 88, No. 6, pg. 066103, 2017.
- Turan, N., Kokal, U., Kurt, H. and Celik, M., “Experimental Study of the Effects of the Cathode Position and the Electrical Circuit Configuration on the Operation of HK40 Hall Thruster and BUSTLab Hollow Cathode,” 52nd Joint Propulsion Conference, Salt Lake City, UT, July 2016, also AIAA-2016-4834.