

Nawaf Abualsaud

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Education

King Abdullah University for Science and Technology (KAUST)

M.S, Mechanical Engineering

- Thesis Advisor: Prof.Aamir Farooq
- Courses:** Experimental Methods in Fluids, Incompressible Fluids

Thuwal, Saudi Arabia

August 2022 - Current

University of Southern California

B.S, Mechanical Engineering

- Thesis Was Selected as One of The Top In The Department

Los Angeles, CA

May 2018 - May 2022

Research Experience

KAUST, Chemical Kinetics and Laser Sensing Laboratory

Graduate Researcher

- Designing a novel approach of sensing Benzene in the fingerprint region using a mid-infrared laser-based sensor which will provide the most sensitive detection of Benzene
- Leading the development of a highly-advanced frequency comb laser in the mid-infrared region in collaboration with other world-class universities

Thuwal, Saudi Arabia

Aug 2022 - Present

KAUST, Chemical Kinetics and Laser Sensing Laboratory

Undergraduate Researcher

- Designed a tunable, laser-based combustion diagnostic for Hydrogen Cyanide in the Mid-Infrared region

Thuwal, Saudi Arabia

June 2021 - Dec 2020

The University of Tokyo

Student Researcher

- Examined and analyzed the required performance of carbon fiber reinforced thermoplastics (CFRP) as a sustainable solution for high demand in Aerospace and Automobile Industries.

Virtual

May 2021 - July 2021

The University of California San Diego

Student Researcher

- Formulated machine-learning algorithms that applied proven regression techniques on a carbon/epoxy composite failure envelope dataset which performed very accurately to the experimental data up to 92 percent of the time.
- Produced a convolutional neural network algorithm as a means to detect crack pixels on a large dataset of cracked pavement which outperformed previous algorithms by over 60 percent.

Virtual

May 2020 - Aug 2020

Publications

A Laser Diagnostic For HCN Detection in Mid-Infrared

- Ali Elkhazraji, Mohammad Adil, Binod Giri, Mhanna Mhanna, **Nawaf Abualsaud**, Ahmed Ayidh Alsulami, Mohammad Khaled Shakfa, Marco Marangoni, Aamir Farooq. (2022) **PROCI**

Awards and Fellowships

KAUST Gifted Student Program Scholar , Full-ride, Fully-funded, Invitation-only scholarship

2018-2022

Natl. Academy of Engineering Covid-19 Call to Engineering Cohort ,

2020

MiSK Leadership Program at Harvard University , Fully Funded Fellowship Program at Harvard

2016

Technical Presentations

39th International Symposium on Combustion

Ali ElKhazraji, **Nawaf Abualsaud**, Mhanna Mhanna

Laser Diagnostic For HCN Detection in Mid-Infrared

Vancouver, CA

2022

Conference on Lasers and Electro-Optics

Ali ElKhazraji, Mhanna Mhanna, **Nawaf Abualsaud**

A Laser Diagnostic For HCN Detection in Mid-Infrared

San Jose, CA

2022

American Institute of Aeronautics and Astronautics Region VII Student Conference

Nawaf Abualsaud, Molly Hurley, Micah Pratt, Aram Shahinyan

Improved Soft Robotic Gripper Design Using Shape Memory Alloys

Merced, CA

2022

Technical Skills

Programming Java, JavaFX, Python, MATLAB, LaTeX.

Engineering Software ANSYS Mechanical, Siemens UG NX, SolidWorks, StarCCM+.

Laboratory Laser Spectroscopy, Frequency Combs, Difference Frequency Generation Lasers, Quantum-Cascade Lasers, Shocktube Combustion, CNC, Silicone Molding, Soft Robotics.

References available upon request.