

# UNIVERSITY OF ALBERTA – FUTURE ENERGY SYSTEMS SOLAR

**\$6.5M** in research funding to 2023

**7** active solar projects

**8** Principal Investigators and Co-Investigators

**44** students & post-doctoral fellows

## HARNESSING SOLAR ENERGY

The sun powers the entire world, providing warmth, light, and sustenance. Technologies have made it possible to use the sun's energy to produce electricity, and new refinements may allow us to diversify the ways in which solar energy can be harnessed, stored, and utilized. By identifying lower-cost materials for use in construction of solar cells, finding new catalysts to enable different types of storage, and identifying more efficient methods for market integration, it may be possible to develop vast energy resources from the sun.

## CURRENT RESEARCH PROJECTS

Active, Stable, and Abundant Photocatalytic Materials for Hydrogen Fuels

Principal Investigator: Steven Bergens

Alternative Energy Generation: Strategic Design of Photovoltaic and Thermoelectric Materials Using Modular Chemistry and Assembly, Interface Engineering, and Spectroscopic Characterization

Principal Investigator: Juli Gibbs

Artificial Photosynthesis Using Semiconductor Nanomaterials

Principal Investigator: Karthik Shankar

Diversifying the Renewable Energy Portfolio with Double Perovskite PV Materials

Principal Investigator: Vladimir Michaelis

High-throughput Materials Discovery through Materials Genomics

Principal Investigator: Arthur Mar

New materials for Photovoltaics

Principal Investigator: Jillian Buriak

Regulation and Integration of Solar PV into Electricity Markets

Principal Investigator: David Brown

## RECENT PUBLICATIONS

How To Optimize Materials and Devices via Design of Experiments and Machine Learning

Lead Author: Bing Cao

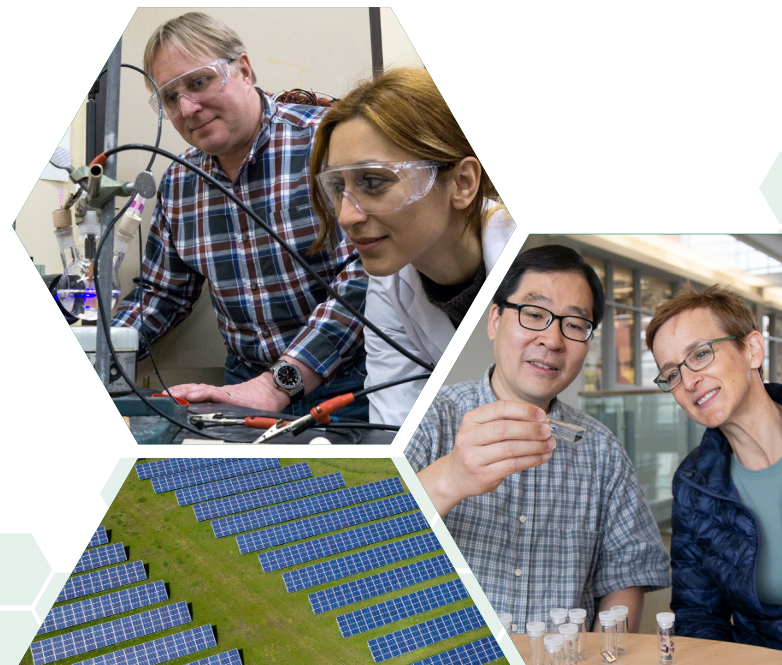
C3N5: A Low Bandgap Semiconductor Containing an Azo-Linked Carbon Nitride Framework for Photocatalytic, Photovoltaic and Adsorbent Applications

Lead Author: Pawan Kumar

## RECENT NEWS STORIES

- There's more than enough solar power to meet our energy needs: the problem is storing it
- They ask, machines answer
- Solving the energy crisis, one carbon dioxide molecule at a time

For the latest information: [futureenergysystems.ca/solar](https://futureenergysystems.ca/solar)



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