

# Attacking the Energy-Environment Problem with Basic Research and Novel Technologies



Michael Aziz

Gene and Tracy Sykes Professor, of Materials and Energy Technologies

## CURRENT RESEARCH

### Developing cost-effective storage solutions for intermittent renewable electricity

Finding the energy to power a civilization of about 10 billion people without destroying the environment is the greatest challenge facing humanity this century. Unlike many research opportunities, failure to solve this problem risks centuries of hardship for human civilization. Therefore, the work of Dr. Michael Aziz, of Harvard University, is of utmost importance.

The cost of solar and wind power has dropped so much that the greatest remaining obstacle to us getting the vast majority of our electricity from sunshine and wind is their intermittency. Dr. Aziz leads an interdisciplinary research team developing a promising battery storage technology for safely and cost-effectively storing enormous amounts of solar and wind-generated electricity. This will enable us to use them when we need them, rather than when Nature chooses to provide them. His team was recognized by *Discover Magazine* when their invention was listed among the top 100 stories of 2014. While massive worldwide deployment of clean energy technologies will take many decades, Dr. Aziz presses forward with the knowledge that, "if we wait to see how things go before really getting moving, we're guaranteed to get there too late."

Dr. Aziz's work aims for both near-term and long-term impact on the energy-environment problem. In addition to his work with battery storage science and technology, Dr. Aziz has begun to work on a variety of other projects that may reduce the burden being placed upon our planet while aiding humanity in meeting its needs. Through research on some of the greatest technical obstacles in renewable energy and sustainability today, Dr. Aziz aims to make important contributions to solving the...

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## AFFILIATION



Harvard University

## EDUCATION

- Ph.D., in Applied Physics, 1984 , Harvard University
- S.M., in Applied Physics, 1980 , Harvard University
- B.S., in Applied Physics, 1978 , California Institute of Technology

## AWARDS

- Bruce Chalmers Award, Minerals, Metals, and Materials Society (TMS)
- Fellow, American Association for the Advancement of Science
- Fellow, Materials Research Society
- Fellow, American Physical Society
- Sauveur Memorial Lectureship, ASM International, Boston
- and 2 more...

## RESEARCH AREAS

Environment, Oceanic, Chemical, Clean Energy

## FUNDING REQUEST

As climate change threatens centuries of hardship, your contributions will provide Dr. Aziz with additional resources, permitting him to rapidly expand the scope of his research in renewable energy storage and other clean energy technologies. It will allow him to pay and equip graduate students and postdocs to investigate new chemistries and engineering approaches for storage cost reductions, to rapidly investigate new ideas in clean energy science and technology, and to make the promising ones a reality. Dr. Aziz could very much use your help in hastening the day when we get most of our energy from clean, renewable sources.