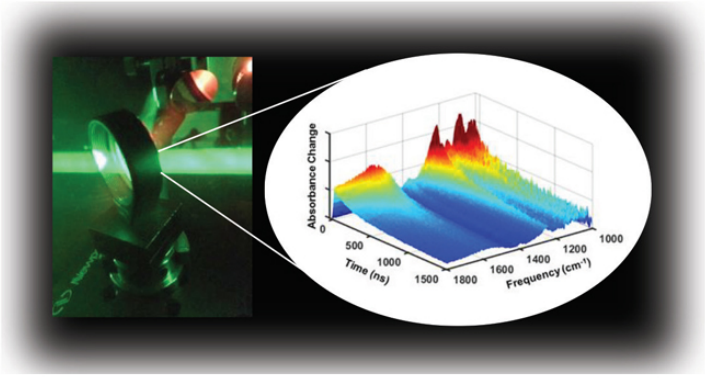
Ultra-High Sensitivity Low Cost Transient Spectrometer

ID# 2018-4720



Novel Transient Absorption Spectrometer

Technology Summary

A novel transient absorption (TA) spectrometer with dramatically enhanced sensitivity, versatility, and ease of use. Current TA systems are too expensive to build and operate ($1M), take up an entire room, and require specialized staff. Our novel TA system outperforms the known art, with a 100x increase in sensitivity over current methods. Advances in the instrument will permit its sale at a price 5x lower than conventional instruments, creating entirely new markets. The novel TA instrument can be manufactured and sold as an all-in-one, or “black box”, with a much smaller 3’x4’ workspace, allowing for easy integration into any lab and effective operation by even unskilled users (student trainees).

Application & Market Utility

The performance advances demonstrated by the novel TA spectrometer coupled with a lower price point, smaller footprint and ease of use will create new market opportunities, enabling a far larger number of academic and industrial researchers to use TA spectroscopy to characterize chemical processes in catalytic and biochemical reactions that are central to research in a range of disciplines.

Next Steps

Seeking research collaboration and licensing opportunities.

TECHNOLOGY READINESS LEVEL 4-7

Seeking

Investment | Licensing | Research

Keywords

- Transient absorption Spectroscopy
- Visible
- Mid-infrared

Researchers

John B. Asbury, Ph.D.
Associate Professor of Chemistry
Website

Eric R. Kennehan, Ph.D.

Christopher Grieco, Ph.D.

Other Researchers

Adam Rimshaw, Ph.D.

Originating College

Eberly College of Science

Office of Technology Management Contact

Rokita, Joseph
jjr152@psu.edu
814-863-6336

invent PENN STATE
the ingenious power of partnership

Invent Penn State is a Commonwealth-wide initiative to spur economic development, job creation, and student career success. Invent Penn State blends entrepreneurship-focused academic programs, business startup training and incubation, funding for commercialization, and university-community collaborations to facilitate the challenging process of turning research discoveries into valuable products and services that can benefit Pennsylvanians and humankind. Learn more at invent.psu.edu.

Penn State is an equal opportunity, affirmative action employer, and is committed to providing employment opportunities to all qualified applicants without regard to race, color, religion, age, sex, sexual orientation, gender identity, national origin, disability or protected veteran status.