

## Sustainability & Environment

### Current Projects:

Project Title: X-ray Imaging of Multiphase Flows of Interest to ONR

PI: T.J. **Heindel**

Funding Agency: Office of Naval Research (ONR)

Dollar Amount and Duration: \$250,000; 04/2018 - 03/2023

Project Title: Environmental Field Evaluation of Potassium Acetate as an Alternative Deicer

PI/co-PIs: C.R. **Rehmann**, K. Ikuma, M.A. Perez

Funding Agency: Minnesota Dept. of Transportation

Dollar Amount and Duration: \$212,877; 08/2019 - 06/2022

Project Title: RAPID: Autothermal Pyrolysis of Lignocellulosic Wastes to Sugars and Other Biobased Products

Funding agency: American Institute of Chemical Engineers

Dollar Amount and Duration: \$2,100,000; 01/2019 - 12/2021

PI/co-PIs: R.C. Brown, M. **Mba-Wright**

Project Title: Controlled Polymerization of Lignin for Ideal Precursor of High-Quality Carbon Fiber

PI/co-PIs: X. Bai, R.C. Brown, E.W. Cochran, M. **Mba-Wright**

Funding agency: USDA-National Institute of Food & Agriculture (NIFA)

Dollar Amount and Duration: \$500,000; 01/2018 - 12/2020

Project Title: Development of Energy and Water Master Plan for Iowa Army National Guard

PI/co-PI: S.-C. **Kong**, A. Kimber

Funding Agency: DOD Iowa Army National Guard

Dollar Amount and Duration: \$100,000; 08/2018 - 08/2020

Project Title: Evaluation of Saturated Buffers as a Conservation Drainage Practice for Treating Agricultural Subsurface Drainage

PI/co-PIs: C.R. **Rehmann**, M.A. Perez, C.J. Rutherford, T.M. Isenhardt, and D. Jaynes

Funding Agency: Iowa Nutrient Research Center

Dollar Amount and Duration: \$97,911; 07/2018 - 06/2020

Project Title: On-command Pyrotechnic Light Emission through Controlled Electromagnetic Irradiation

PI/co-PIs: T.R. **Sippel**, S. **Subramaniam**, J.B. **Michael**

Funding Agency: SERDP / Naval Surface Warfare Center Crane

Dollar Amount and Duration: \$149,925; 06/2019 - 05/2020

Project Title: Autothermal Pyrolysis of Western Red Cedar for Dispatchable Renewable Power

Funding agency: Nebraska Public Power District

Dollar Amount and Duration: \$22,839; 01/2020 - 02/2020

PI/co-PIs: R.C. Brown, M. **Mba-Wright**

### Completed 2019:

Project Title: Valorization of Biochar: Applications in Anaerobic Digestion, Livestock Odor Control and Plant Growth

Funding agency: USDA-National Institute of Food & Agriculture (NIFA)

Dollar Amount and Duration: \$1,469,448; 01/2018 - 12/2019

PI/co-PIs: R.C. Brown, D.S. Andersen, J.A. Koziel, M. **Mba-Wright**, Z. Wen

Project Title: High-Speed Stereographic Imaging System for Multiphase Flows  
PI/co-PIs: T.J. **Heindel**, J.B. **Michael**, T.R. **Sippel**  
Funding Agency: Office of Naval Research (ONR) DURIP award  
Dollar Amount and Duration: \$253,417; 06/2018 - 05/2019

**Completed 2018:**

Project Title: Rapid: Autothermal Pyrolysis of Lignocellulosic Wastes to Sugars and Other Biobased Products (Budget Period 2)  
PI/co-PIs: R.C. Brown, M. **Mba-Wright**, Z. Wen  
Funding agency: American Institute of Chemical Engineers  
Dollar Amount and Duration: \$700,000; 01/2018 - 12/2018

Project Title: Anaerobic Digester Life Cycle Cost Analysis  
Funding agency: Iowa Economic Development Authority  
Dollar Amount and Duration: \$16,200; 11/2017 - 05/2018  
PI: M. **Mba-Wright**

**Completed 2016:**

Project Title: Developing Green, Highly Flowable, Rapid Set, High Performance Concrete for Pavement Patch Repair  
Investigators: K. **Wang** and G. Lomboy  
Sponsor: US DOT  
Dollar Amount and Duration: \$150,000; 8/2014 - 5/2016