

ND EPSCoR RESEARCH IMPACT: CSMS

SUBJECT: ND EPSCoR Center for Sustainable Materials Science (CSMS) research discovers novel polymers and composites derived from biomass

CATEGORY- Chose U.S./global economy, national security or scientific knowledge:
Scientific Knowledge

NSF AWARD(S) - Provide award number hyperlink:

[IIA-1355466](#)

[ND EPSCoR](#)

[CSMS](#)

OTHER SUPPORTING INFORMATION:

N/A

BRIEF SUMMARY OF OUTCOMES - (Why is this award compelling for use as an Impact?):

Research is leading to the discovery of new polymers and composites derived from biomass that have performance properties needed for today's applications and can be degraded at the end of their useful lifetime.

THREE REASONS this award outcome impacts U.S./global economy, national security or scientific knowledge:

The ND EPSCoR award has the following impacts:

1. Novel monomers from biomass have been synthesized and incorporated into polymers and structure-property relationships being studied.
2. New types of highly crosslinked resins derived from biomass have been used to prepare biocomposites that have exceptional performance properties, demonstrating that bio-based systems are viable replacements for petrochemical systems.
3. Polymers are being designed to be able to be degraded after their use allowing for cradle-to-cradle use of raw materials.

NSF Directorate(s)/Division(s):

OD/OIA/EPS

State(s):

North Dakota

