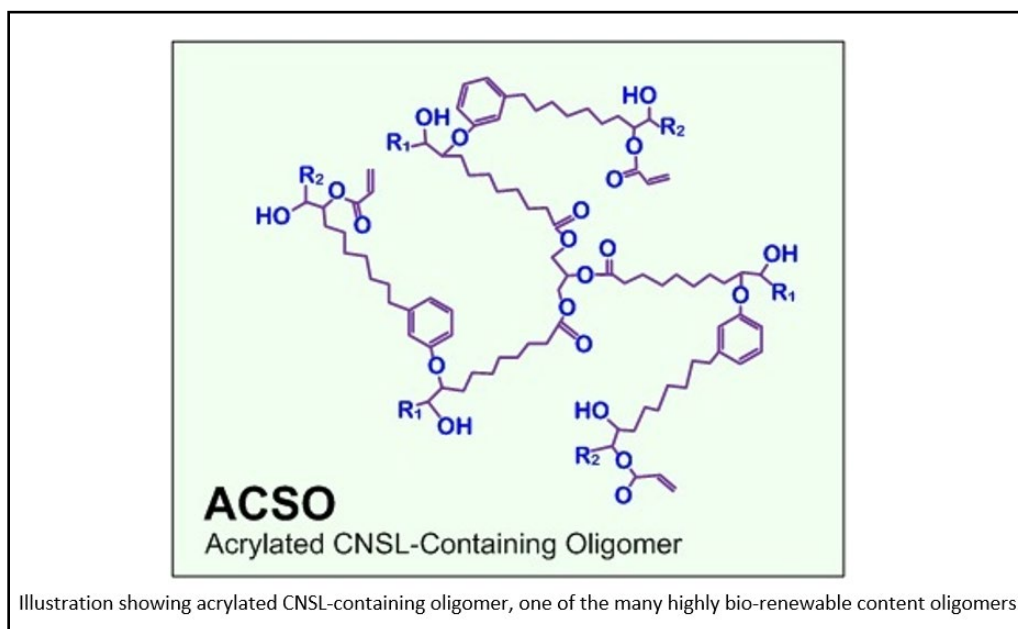


## BIO-BASED UV-CURABLE OLIGOMERS FOR COATINGS AND THERMOSETS (RFT-365)

### Invention Summary:

Scientists working at NDSU have developed branched and hyperbranched oligomers derived from a combination of soybean and cashew nutshell oils (CNSL). These oligomers can be either UV-cured (for coatings) or thermally cured (to produce thermoset polymers). Coatings incorporating this hyperbranched material had improved adhesion and impact resistance, because the coatings were both strong and flexible. This material can be used in anti-corrosion coatings and sealants, composites, inks, and adhesives, as well as directly in thermoset polymers. These oligomers impart improved material properties compared to current bio-based materials, and in some cases exhibit properties superior to even their petroleum-based counterparts.



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**Benefits:**

- UV-curable coatings, excellent curing characteristics.
- Can be used for anti-corrosion and highly durable coatings, adhesives, lubricants, inks, resins, and composites, and for thermoset polymers.
- Coatings can be applied on wood, metal, paper and/or plastic surfaces.
- Coatings provide high tensile strength, smooth surface, excellent adhesion, and high impact resistance.
- Bio-based hyperbranched cross-linker may be combined with acrylated plant oil to produce materials with very high bio-based content.

**Patents:**

This technology is the subject of US Issued Patent No. [9,187,603](#) and is available for licensing/partnering opportunities.

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