

## HYBRID BIO-BASED COATINGS (RFT-310)

### Invention Summary:

Researchers at NDSU have developed novel, hybrid and sustainable coatings. Sucrose and vegetable oil moieties form the base of the coatings. The composition may be formulated with or without solvents and is capable of maintaining the one-phased state through two different curing processes. This hybrid curing involves enamine formation, followed by air drying, using metal salt dryers. The resin consists of partially enaminated acetoacetylated sucrose (EAS), Sucrose soyate (SS) and/or Acetoacetylated sucrose soyate (ASS), mixed in different proportions. Variation in mixing ratios influence the coating properties. Overall, the co-cured coatings exhibit properties comparable to that of individual SS and EAS based coatings, with improved overall characteristics. The invention has curable coating compositions which may be formulated with or without solvents. A curable coating composition of the invention contains a resin such as those discussed above or a mixture of those resins, at least one metallic drier compound; and optionally one or more solvents.

### Benefits:

- Balanced flexibility and rigidity
- Enhanced hybrid curing process
- Improved drying times and crosslinking
- Renewable raw material – Sucrose
- Low viscosity
- Sustainable

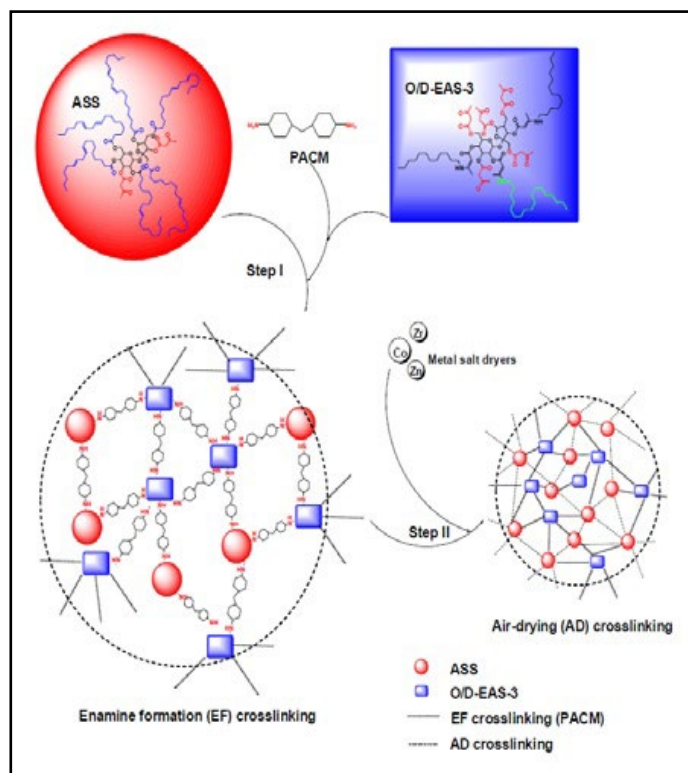
### Applications:

Immediate applications include, but not limited to:

- Solvent Free Coatings
- Adhesives
- Novel Biocompatible Resins

### Phase of Development:

This technology has successfully completed laboratory testing with reproducible results.



### NDSU Research Foundation

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**Patents:**

This technology is the subject of US Issued Patent No. [9,567,422](#) and is available for licensing/partnering opportunities.

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