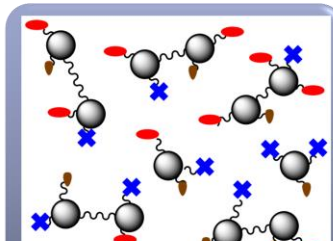
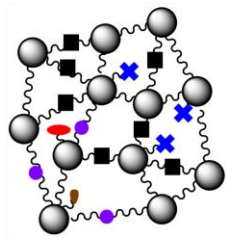
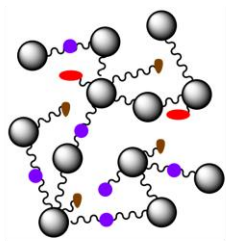
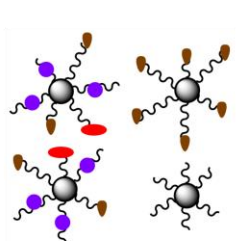


D-Glue Adhesives - enabling *Design for Disassembly*

Concept & Approach

A **circular economy** can only be accomplished through **recovery and reuse** of value-added materials. Manufacturers do not currently have the materials toolbox to deliberately plan for product end-of-life, especially using adhesive assembly methods. **D-Glue adhesives** aim to enable *Design for Disassembly* by allowing for adhesives to be defeated at end of product life.

A Stage → B Stage → C Stage → D Stage



Traditional Thermoset Chemistry

New "D-Stage"
Defeated Network

Our patented technology converts a B-stage thermoset polyurethane with high levels of adhesion into a material with low, "sticky-note" levels of adhesion – **on demand**. This approach will not only allow the ease of manufacturing using adhesives, but also enables a pathway to **close the loop** in a circular economy for consumer electronics, apparel, packaging, etc. and recover higher value components.

Status

We have demonstrated proof of concept of adhesion (confirmed by peel strength analysis) and defeatability. Creating a predictive model to understand key design and process parameters. We can implement our drop-in approach to a wide range of applications.

Current iterations can meet and exceed apparel benchmarks and debonding can be tuned by altering conditions such as time and temperature.

Commercial apparel adhesive strength benchmark

