

Polymer Crosslinking with Calcium Alginate Hydrogels

Teaching Middle School and High School Students About Polymer Crosslinking

Partner Schools

- Costa Mesa Middle School
- Laguna Beach High School

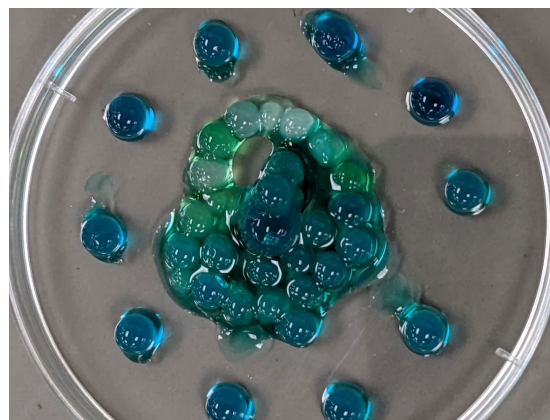
Student Learning Outcomes

- Understand what a polymer is
- Understand what crosslinking is and how it affects polymer mechanical properties (sol-gel transitions)
- Experiment with polymer processing using a plastic pipette or syringe to make gels of different shapes, sizes, and colors
- Learn real-world application of soft materials

Demonstration Set-up

1. Make an alginate bead from sodium alginate and calcium chloride
2. Visually see what crosslinking looks like at the molecular scale with a video game module
3. Free experimentation with alginate gels and colored dyes

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Calcium Ion

