

Rollins, J.; Call, C.B.; Herrera, D.; Jenkins, C. L. Gold Binding and Removal by Sulfur-based Cationic Polymers. *ACS Applied Polymer Materials*. **2025**, 7(13) 8529-8537.
<https://doi.org/10.1021/acsapm.5c00958>

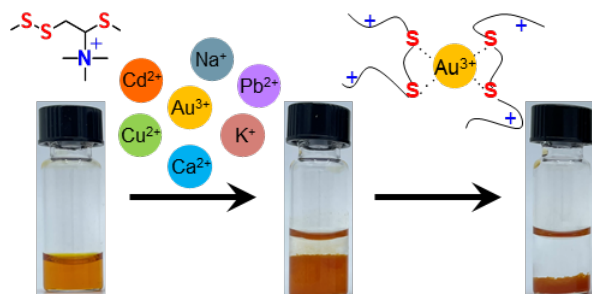


Figure 1 illustrates the synthesis and characterization of poly(1,3-butadiene) (PB). The left panel shows a photograph of a white, bulbous PB sample. The middle panel displays the ^1H NMR spectrum of PB, with peaks labeled for $n=4$, $n=3$, $n=2$, and $n=1$, corresponding to different microstructures. Below the spectrum is the chemical structure of PB, a linear chain of butadiene units with a central 'S' in a green circle representing a sulfur atom. The right panel is a bar chart showing the Adhesion (MPa) for PB at different extents of polymerization: 25%, 50%, and 100%. The adhesion values are approximately 1.8 MPa for 25%, 0.8 MPa for 50%, and 0.3 MPa for 100%.

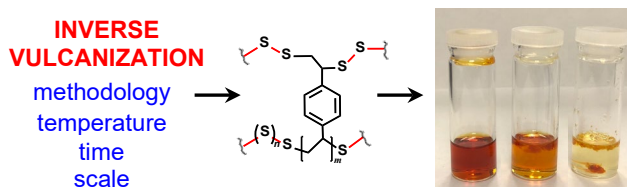
Figure 1: Comparison of the chemical structure of linalool and the appearance of a garlic bulb. The chemical structure of linalool is shown as a ring of eight sulfur atoms (S) connected by yellow lines, with the text "S VS" next to it. To the right is a photograph of a garlic bulb. An arrow points from the garlic bulb to a bar chart. The bar chart compares the linalool content of two samples: S (blue bar) and GEO (orange bar). The y-axis is labeled "linalool" and ranges from 0.0 to 2.5. The S bar has a value of approximately 0.45, and the GEO bar has a value of approximately 1.8. Error bars are shown for both bars.

precious metal binding $\longleftrightarrow$ **heavy metal indicator**

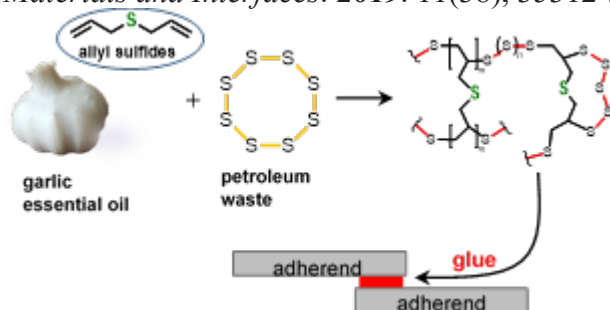


The diagram illustrates the proposed heavy metal indicator. On the left, a vial shows a yellow solution with a precipitate at the bottom, labeled "precious metal binding". On the right, a row of vials shows the color change of the indicator in the presence of different heavy metal ions: Ctrl (colorless), Cu^{2+} (yellow), Pb^{2+} (orange), Ag^{+} (yellow), Cd^{2+} (yellow), and Na^{+} (colorless). A central diagram shows a red wavy line with '+' signs and 'S' labels, representing the binding of heavy metal ions to the indicator.

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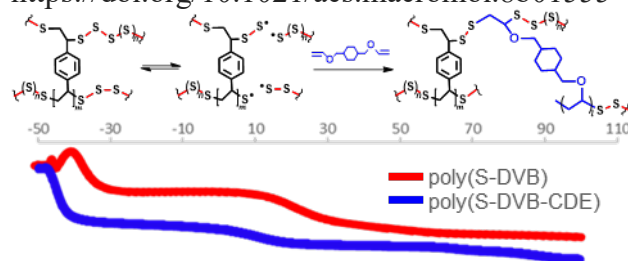


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