

# New light-sensitive polymers may permit 'etching' images into vegetation

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Scientists in Ohio are reporting development of the first “biophotoreists,” new compounds that may be a counterpart to the light sensitive materials used in key industrial processes — such as photolithography and photoengraving — to etch patterns for electronic circuitry and other purposes on silicon chips and other surfaces.

The new compounds could expand such patterning capabilities to biological materials such as vegetation on the ground or coatings of algae, the researchers said.

In the study, scheduled for the current issue of ACS’ *Biomacromolecules*, a monthly journal, Douglas C. Neckers and Andrei V. Fedorov describe syntheses of new forms of glyphosate, the active ingredient in the herbicide Roundup. The new compounds are photosensitive, able to change from liquids into polymers when exposed to light. Laboratory tests showed that the compounds had herbicidal action against strains of algae, E. coli and other organisms.

Those two characteristics suggest that the compounds “have a valuable potential for the development of new bioactive coatings with herbicidal properties,” the report states. The researchers added: “Given that photopolymers have wide use in coatings, paints and varnishes, these results raise the possibility of surface coatings with herbicidal activity. In the abstract, one can also envision surfaces imaged with herbicides allowing plant growth or not depending on the image.”

Source: ACS

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