

'Greener' ways to color clothes

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When buying a new outfit, most people don't consider the process that went into tinting that vivid red shirt or colorfully patterned dress. But dyeing clothes requires massive amounts of water, energy and chemicals. So companies are working on new ways to color textiles that are both environmentally friendly and cost-effective, reports an article in *Chemical & Engineering News (C&EN)*, the weekly newsmagazine of the American Chemical Society.

In addition to being resource-intensive, textile dyeing often dumps large quantities of chemicals into wastewater from mills and dye houses in places like China, India and Bangladesh, writes Senior Editor Melody Bomgardner. These substances can turn rivers startling colors and may also affect human health, which recently prompted the Chinese government to shut down many dye factories until they could undergo environmental inspections. The resulting [chemical](#) shortage, as well as the desire for greener processes, has prompted textile manufacturers to seek alternatives to traditional ways of coloring clothes.

Approaches vary widely. Intech Digital, a firm with headquarters in Hong Kong, is using inkjet printers to color textiles with pigments rather than dyes, a process that uses very little [water](#) and produces much less waste than traditional methods. Huntsman, one of the world's largest suppliers of textile dyes and chemicals, has developed a line of dyes that bond more readily to cotton fabric, requiring less water and energy. Another company, ColorZen, invented a cotton pretreatment step that increases the attraction between dye and fiber, using 90 percent less water, 75 percent less energy and 90 percent fewer auxiliary chemicals.

Still other companies, like U.K.-based Colorifix, are producing natural dyes by microbial fermentation, a process that avoids the harsh chemicals used to make [synthetic dyes](#). These innovators of green dyeing technology will need to prove to the [textile](#) industry that their techniques perform just as well as tried-and-true methods without increasing cost, Bomgardner notes.

More information: "These new textile dyeing methods could make fashion more sustainable," [cen.acs.org/business/consumer- ... -methods-make/96/i29](https://cen.acs.org/business/consumer-...-methods-make/96/i29)

Provided by American Chemical Society

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