

Clothing to crow about: Chicken feather suits and dresses

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Scientists are reporting advances in making eco-friendly fabrics from renewable materials, such as chicken feathers. Credit: American Chemical Society

In the future, you may snuggle up in warm, cozy sweats made of chicken feathers or jeans made of wheat, enjoying comfortable, durable new fabrics that are "green" and environmentally friendly. Researchers in Australia are reporting that new advances are paving the way for such exotic new materials — made from agricultural waste or byproducts — to hit store shelves as environmentally-friendly alternatives to the estimated 38 million tons of synthetic fabrics produced worldwide each year.

They review research on the development of these next generation eco-friendly fibers, which will produce fabrics with a conventional feel, in the November 26, 2008 issue of *ACS' Biomacromolecules*.

In the article, Andrew Poole, Jeffrey Church and Mickey Huson note that scientists first produced commercial fabrics made of nontraditional

materials — including milk proteins, peanuts, and corn — almost 50 years ago. Although these so-called "regenerated" fabrics had the look and feel of conventional protein-based fabrics such as wool and silk, they tended to perform poorly when wet. This problem, combined with the advent of petroleum-based synthetic fibers, caused the production of these unusual fabrics to stop, the researchers say.

Amid concerns about the environment and consumer demand for eco-friendly products, renewable fabrics made from nontraditional agricultural materials are now poised to make a comeback, the scientists say. Promising fabric sources include agricultural proteins, such as keratin from scrap chicken feathers and gluten from wheat, they say. The scientists describe advances in nanotechnology and chemical cross-linking that can improve the strength and biodegradability of these fabrics, paving the way for commercial production of eco-friendly clothing, furniture upholstery and other products.

Article: "Environmentally Sustainable Fibers from Regenerated Protein"
pubs.acs.org/stoken/presspac/p.../10.1021/bm8010648

Source: ACS

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