**ENVIRONMENT**

How your T-shirt could reduce pollution

Nanoscientists and fashionistas have banded together to turn your jeans and shirts into air-pollutant-magnetizing eco-tools

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CatClo is an in-development laundry additive that could help your T-shirt remove up to 5 grams of nitrogen dioxide per day from the air — close to the amount the average family car emits. *Photo: ThinkStock/Ingram Publishing*

Cleaning up the pollution we spew into the air with car exhaust and power plants seems hard. But it needn't be, according to British researchers. In an unusual collaboration of form and function, scientists from the University of Sheffield and designers from the London College of Fashion have teamed up to create a liquid laundry additive, CatClo (Catalytic Clothing), that [turns your clothes into pollution magnets](http://phys.org/news/2012-09-pollution-busting-laundry-additive.html) using the magic of nanotechnology. How does this magical laundry detergent work, and when might you buy some? Here, a guide to a potentially effortless way to clear the air:

**How does CatClo work?**The laundry additive coats your clothes with minuscule particles of titanium dioxide, which, when exposed to daylight, attract nitrogen oxides — a major source of pollution — from the air. You only have to use CatClo once per clothing item, [the developers say](http://www.epsrc.ac.uk/newsevents/news/2012/Pages/laundry.aspx), as "nanoparticles of titanium dioxide grip onto fabrics very tightly." The additive can remove 5 grams of nitrogen dioxide a day — the same amount as emitted daily by an average family car, says the University of Sheffield's Tony Ryan — and the pollutants wash off your clothes the next time you do the laundry. "Not a bad haul for simply getting dressed in the morning," [says Clay Dillow at *PopSci*](http://www.popsci.com/science/article/2012-09/your-clothes-could-soon-scrub-pollution-directly-air).

**When can I buy some?**Ryan says he and his colleagues are "working closely with a manufacturer of environmentally friendly cleaning products to commercialize" CatClo, and expect it to be [on shelves within two years](http://www.epsrc.ac.uk/newsevents/news/2012/Pages/laundry.aspx). As for cost, Ryan anticipates that using the additive in a full load "could potentially cost as little as 10 pence," or about 16 cents. That's not nothing, [says Gregory Ferenstein at *TechCrunch*](http://techcrunch.com/2012/09/26/pollution-eating-clothing-heads-toward-commercialization/), "but given the heavy toll that air pollution takes in asthma, cardiac, and other diseases," it seems a small price to pay.

**Might coating your clothes with pollution be... dangerous?**Presumably that's something the detergent companies will be looking into before agreeing to put CatClo in stores, but [Ryan and his collaborators say](http://www.epsrc.ac.uk/newsevents/news/2012/Pages/laundry.aspx) that the nitrogen oxides become "completely odorless and colorless," and are often "dissipated harmlessly in sweat" before you even get them in the laundry. As for the nanoparticles themselves, they're "completely harmless and... unnoticeable from the wearer's point of view." In fact, the health boost for society could be sizable, Ryan says, but the benefits are even greater for people suffering from asthma and other respiratory conditions — they'll be walking around with their own pollution vacuum.

**Environmental Science 122**

Discuss the potential problems (if any) that may arise with this technology. Would you be willing to walk around with a pollution magnet if given the opportunity?

**Environmental Science 123**

Summarize the articles main topic. Do you believe this is possible?