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Hot off the Presses: Printable Solar Panels

| An interview with Professor Ted Sargent
| Alternative Energy Engineer, University of Toronto

How can we harness the sun's energy?

The sun is this incredible vast resource. We get more sun reaching the Earth's surface every day than we need to power the entire world's energy needs. In fact, in an hour, we get enough to meet our energy needs for a year; it's that abundant. But if you look out there and think how we actually today meet our energy needs, it's not using the sun by a large margin at all; we use fossil fuels. And so my group is committed to trying to solve the technological problem that underlies that. The technological problem is not that we can't make efficient solar cells, it's that we can't make solar cells at the moment that are sufficiently lightweight, convenient, low in cost, and efficient simultaneously to make solar energy capture economically compelling. So we're going to reduce the cost of solar electricity.

What are the implications of your solar energy research?

The economic impact will really be had when we can tell customers that they can get solar electricity for a lower cost than if they bought electricity off the grid that was produced through using, say, coal or nuclear. So our technology is based on making an ink that can be synthesized in solution – so it's a liquid, it's a paint – and can be applied from the solution phase using roll-to-roll processes just the way you print newspapers, but where that ink, now that it's absorbing light, is playing this dual role of absorbing sunlight and turning it into electricity efficiently.

What does the future hold for your research?

We picture a world in which solar cells are so convenient. They're on a carpet that you can roll out onto your roof, or they're on a decal that you can stick on the side of a streetcar, you can stick on your car, you can stick on your airplane wing. They're so lightweight, they're so little in their consumption of materials, that we change the paradigm of solar energy from one that takes planning major capital investment to one where it's all over the place because it's so compelling and convenient