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To: Professor Bedrossian& Professor Russo
From: Vanessa Hansen-Quartey (voh2105)
Subject: Final– Solar Renewable Energy Blog Post

The Everyday Solar Cell

What if solar powered technology could be accessed right from your pocket? Better yet, what if it was *stylish*? This is precisely the challenge that an assistant professor from the Department of Chemical Engineering & Material Science at Michigan State University, Richard Lunt, has successfully achieved. His team created Ubiquitous Energy, a company that has produced the first entirely transparent solar cell. Perceived attractiveness prevents current solar cell technology from being a staple component of all construction projects and from being a part of our everyday lives, such as on mobile devices. This technology has the potential to make solar powered technology more mainstream.

Ubiquitous Energy's technology uses a transparent luminescent solar concentrator which allows only ultraviolet and infrared light to be absorbed and convert into electricity, while wavelengths within the visible light spectrum are allowed to pass through. Organic salts absorb the ultraviolet and infrared waves and emit light which is sent to conventional photovoltaic solar cells. This means any surface, be it a window, a building, or a cellphone, can convert ambient light into electricity! Without the bulky hardware, Lunt believes that this technology could "provide more than a quarter of [a] building's energy needs"[1].

As of today, they are able to obtain an efficiency of 10%, while maintaining a visibility of 90%. This is a major improvement from their 1% efficiency back in 2015[1]. This is consistent with experimental data conducted by my research team at Columbia University which found PV cell efficiency to be 7.3% and is also consistent with the literature expected range of 10% – 20%[2].

Hopefully, we will all have this technology in our back pockets!

To learn more, please visit https://ubiquitous.energyand subscribe to my website for all your chemical engineering news!

Other sources:

1. https://ichemeblog.org/2015/04/20/worlds-first-fully-transparent-solar-cell-day-328/
2. https://news.energysage.com/what-are-the-most-efficient-solar-panels-on-the-market/