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New Dyes May Help Solar Technologies Produce Clean Electricity And Hydrogen Fuel

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Over the past decades solar technology has been considered extremely crucial for fulfilling needs of generating power. While the Stanford University had previously put forth a unique way for improving solar power production, here is another method that probably benefits solar technologies. **Chemists from the University at Buffalo have apparently synthesized a new class of photosensitizing dyes for elevating the efficiency of light-driven systems that develop solar electricity and clean-burning hydrogen fuel.**

From commercial point of view, the findings can supposedly form the basis of cost-effective technologies to power almost anything from household appliances to hydrogen vehicles. The dyes known as chalcogenorhodamine may operate as part of a Grätzel-type solar cell for producing electricity. This solar cell reportedly converts sunlight into an electric current. As sunlight strikes the dyes, the energy seems to loosen electrons in the dyes, which migrate through the solar cell, forming the current.

The same process apparently takes place in the mechanism for producing hydrogen also. When sunlight strikes the dyes it frees electrons, but instead of forming a current, the electrons presumably flow into a catalyst. There the electrons supposedly drive a chemical reaction for splitting water into its basic elements which are hydrogen and oxygen. **UB Professor Michael Detty** and colleagues triggered various laboratory tests for showing that a chalcogenorhodamin system is capable of generating hydrogen at unprecedented rates. The newly introduced dyes appear beneficial for solar technologies as they absorb light more intensely and transfer their electrons more fluently than conventional dyes.

The research was published in the Journal of the American Chemical Society in October 2010.

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