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Project 01 - Optimization of Nanoscale Interfaces in Organic PV Active Layers

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The Affordable Photovoltaic Revolution

What are the promising technologies for affordable PV, other than organic PV?

One way to make affordable solar cells is to combine a very efficient, but also very expensive, triple-junction solar cell with an optical concentrator that will focus the sunlight harvested from a large surface onto the solar cell. Concentrating the sunlight several hundred times on the solar cell with cheap optics helps to cut down the costs drastically. But the main drawback of this technology is that it performs poorly in diffuse light, for instance on a cloudy day.

Who else works in organic photovoltaics?

I work in Carlos Silva's group (Université de Montréal) where we do spectroscopic measurement on organic solar cells, but who else in Canada works in the field of organic photovoltaics (OPV)? From the speakers at the photovoltaic workshop, most of the research in organic photovoltaics in Canada with a theoretical approach is done by Michel Côté (Université de Montréal) and Jolanta Lagowski (Memorial University of Newfoundland). The synthesis of new polymers is mainly done by Mario Leclerc's group. The enhancement of OPV by various experimental techniques is dealt with by a lot of research groups : Karen Kavanagh (Simon Fraser), Jean-Michel Nunzi (Queens), Ricardo Izquierdo (UQAM), Vo-Van Truong (Concordia), Alex Adronov (McMaster), Michael Brett (University of Alberta) and Ribal Georges Sabat (Royal military college of Canada).

When is the photovoltaic revolution going to happen?

From the industry workshop, I learned that everybody agrees that photovoltaics will be the dominant player in energy worldwide in a horizon of 50 to 100 years. Meanwhile, we have to push our research forward to make it happen!