

	Weilin Chen
	Professor, Department of Chemistry, Northeast Normal University
	chenwl@nenu.edu.cn
	(please insert your homepage address here)

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Dye-sensitized solar cells (DSSCs) is the third-generation photovoltaic cells developed by Grätzel and O'Regan. It has the characteristics of low cost, simple manufacture process, tunable optical properties, and higher photoelectric conversion efficiency (PCE). With an ever increasing energy crisis, there is an urgent need to develop high efficient, environmentally benign, and energy-saving cell materials. Polyoxometalates (POMs), as a kind of molecular inorganic quasi-semiconductors, are promising candidates being used in different parts of DSSCs due to their excellent photosensitivity, redox, and catalytic properties, as well as relative stability. We try to design and synthesis of serials of new POM compounds, which can be used to enhance the photoelectric conversion efficiency of DSSCs. The properties of POMs, namely, electron acceptor, photosensitivity, redox and catalysis can be efficiently applied in DSSCs.

Possible Collaborations: Graham Newton

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