

## **Nanostructured Materials for Photoelectrocatalysis Applications**

Luiz Henrique Dall'Antonia

Dep. Química - Universidade Estadual de Londrina

Energy and pollution are among the biggest challenge to be solved by many researchers nowadays. In our research we have been focus in different nanostructured semiconductor oxides and, more recently, in metal organic frameworks applied in photoelectrocatalysis. Always, with the aim to investigate and improve the dye discoloration in water solution and to convert CO<sub>2</sub> in to more valuable fuels. In the talk, it will be discussed about different deposition methods and synthesis conditions to prepare oxide and photoactivity metal organic framework photoelectrodes. The intention is inhibited the surface photogenerated charge carrier recombination and, in this way, to enable continuous use of electrons and holes to photoelectrocatalytic reactions. Many distinctive materials had been studied in our researches, such as BiVO<sub>4</sub>, Cu<sub>2</sub>V<sub>2</sub>O<sub>7</sub>, CeVO<sub>4</sub>, ZnO, Fe<sub>2</sub>O<sub>3</sub> and metal organic framework based on iron, manganese and copper.

\* main author email: [luizh@uel.br](mailto:luizh@uel.br)