

**Photocatalytic and photoelectrochemical
water splitting based on oxynitride materials**

Kazunari Domen

(Department of Chemical System Engineering, The University of Tokyo)

Abstract:

Hydrogen production from water using solar energy is one of the attractive candidates to realize a clean and sustainable energy system. We have been developing new materials for water splitting with a response to visible light to utilize solar energy. After rather extensive survey of various kinds of semiconducting materials, we have found some (oxy)nitrides and (oxy)sulfides are suitable for visible light induced water splitting reaction. Two different types of application of those materials, i.e. photocatalytic and photoelectrochemical water splitting, will be discussed.