Photochemistry with Diamond

J. Barkl, A. Zaniewski and R. Nemanich

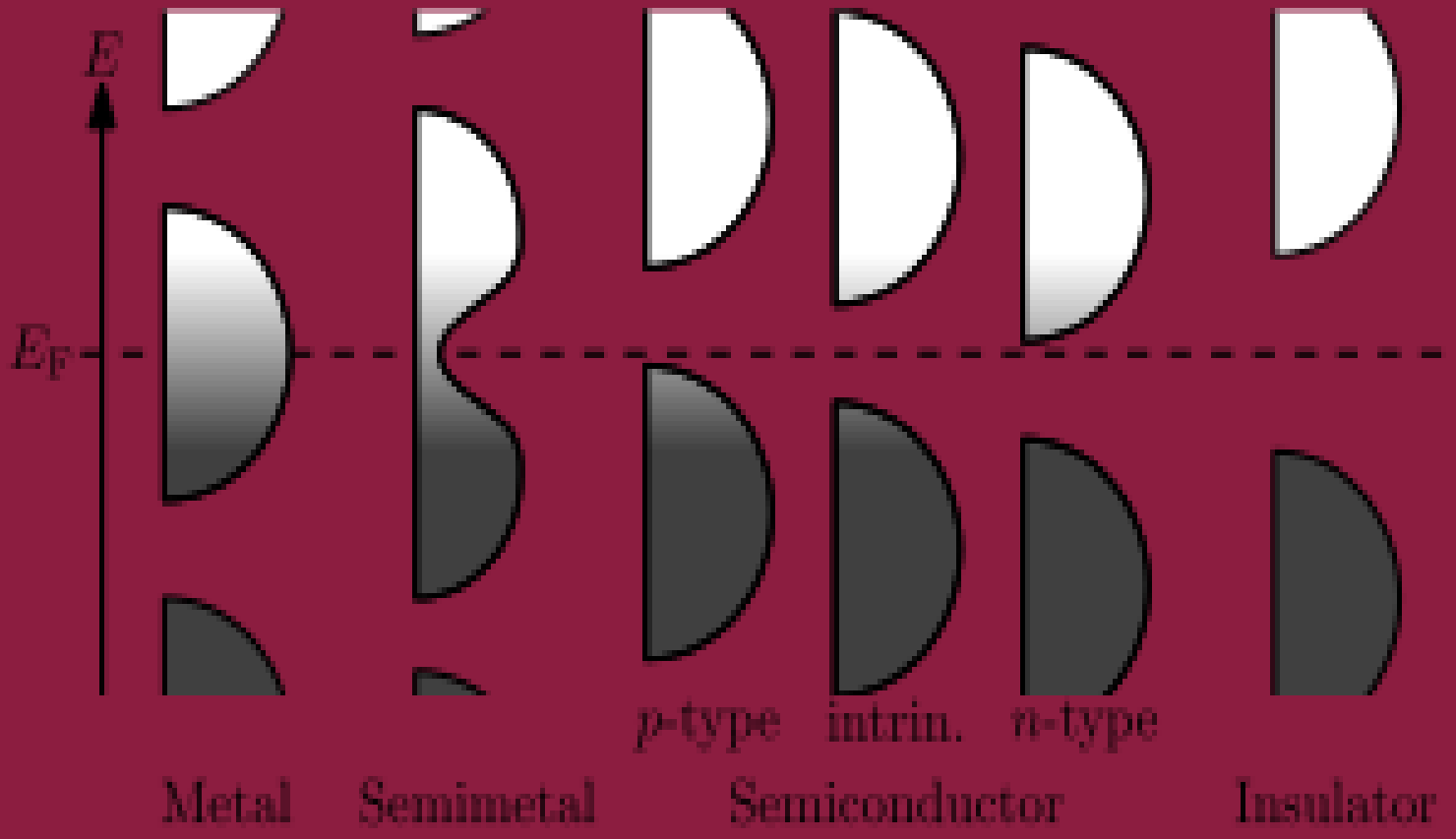
Department of Physics

Semiconductors

Unique electrical conductive behavior

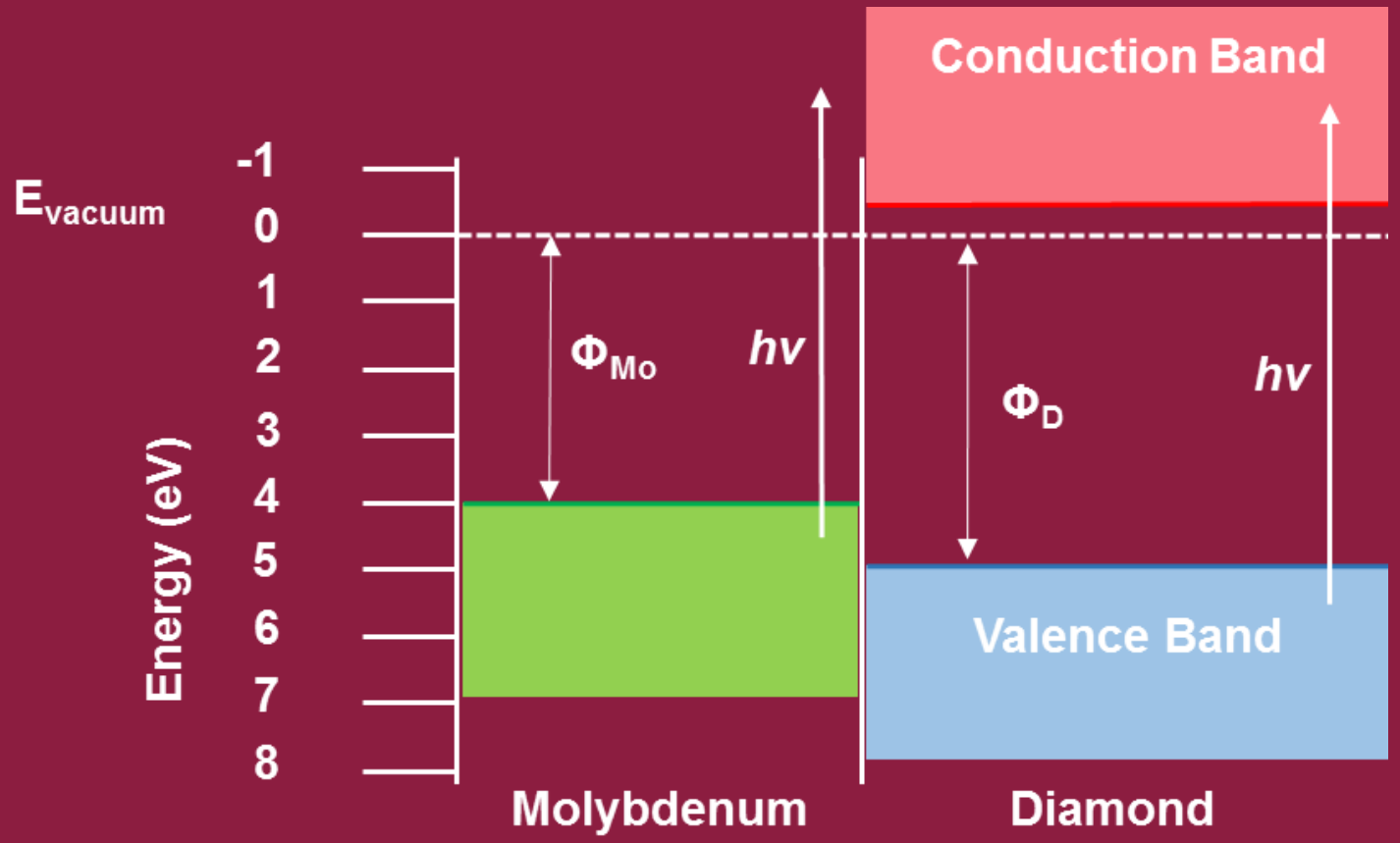
Between conductors and insulators

Require energy to conduct



https://commons.wikimedia.org/wiki/File:Band_filling_diagram.svg

Unique Properties

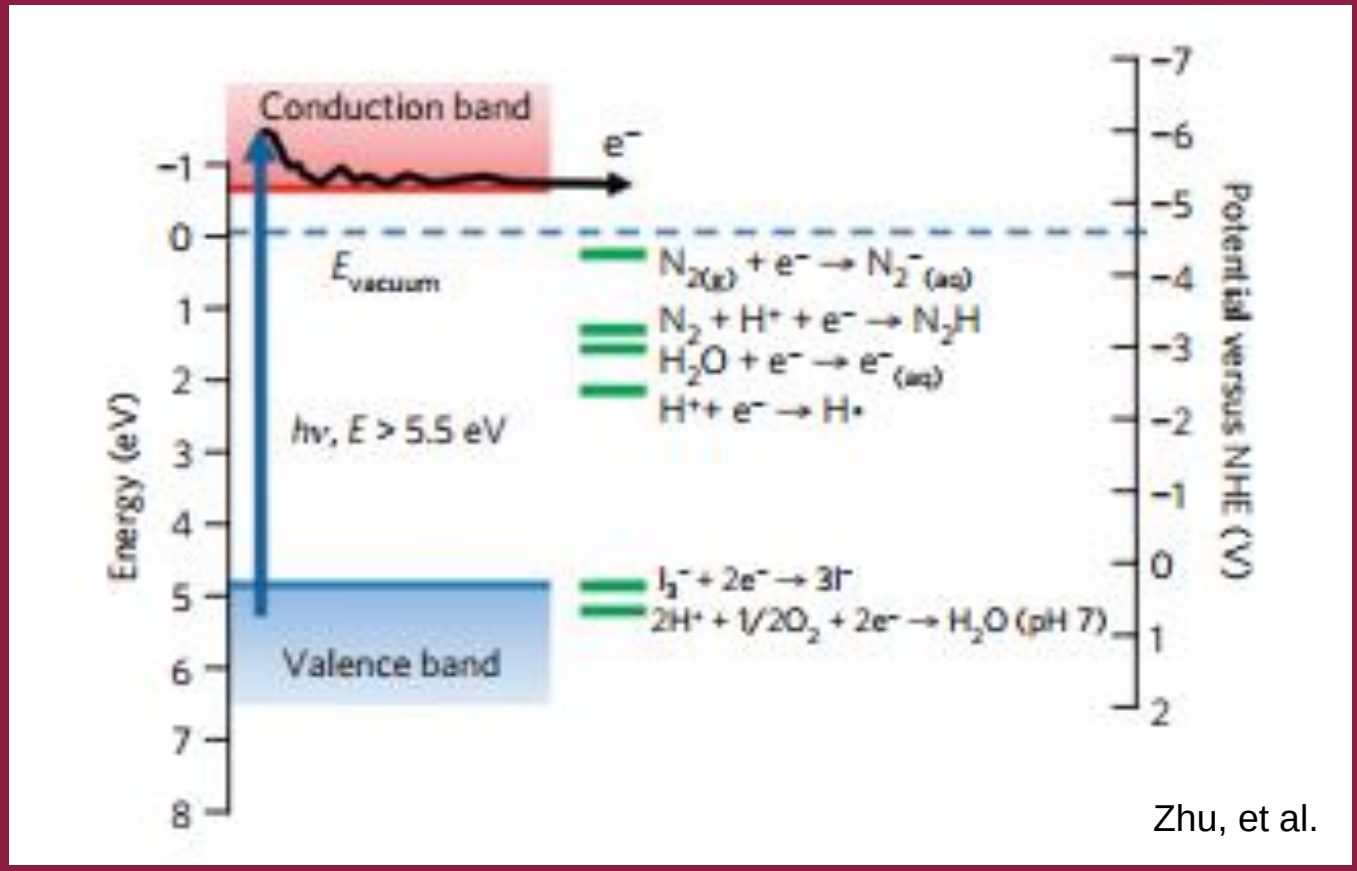


Photoemission

Electrons excited to states above vacuum level

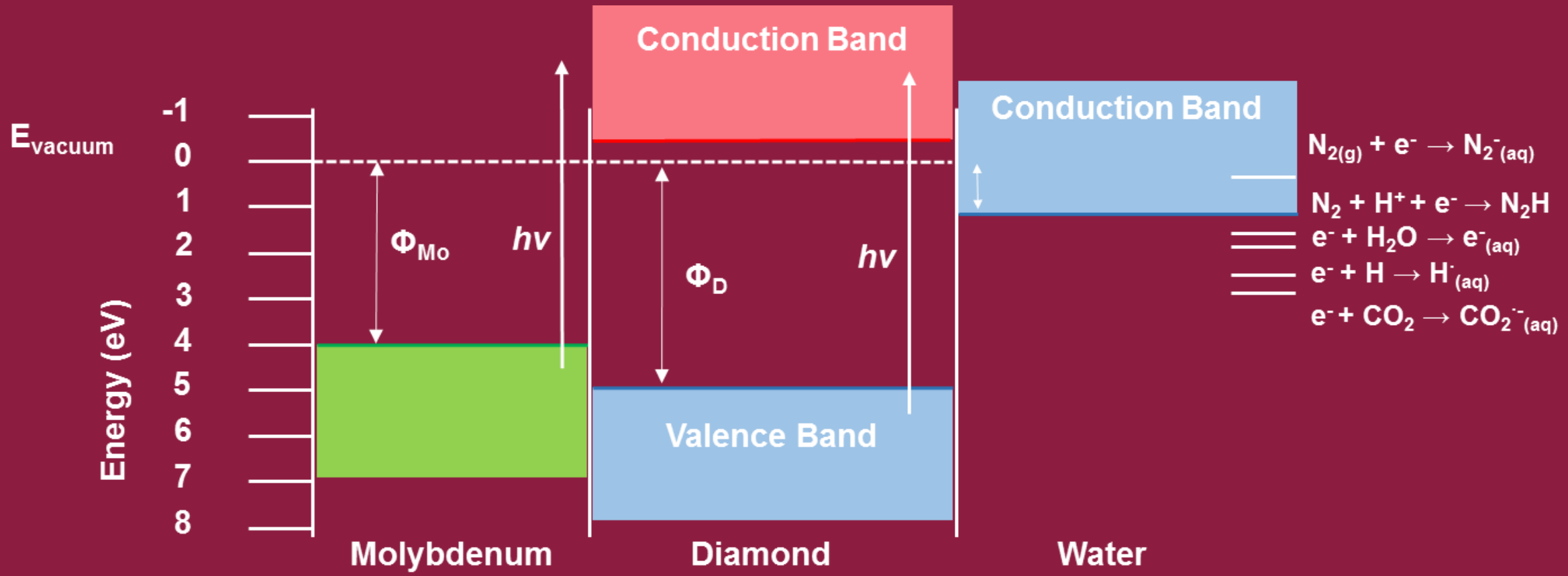
Transported to the sample surface

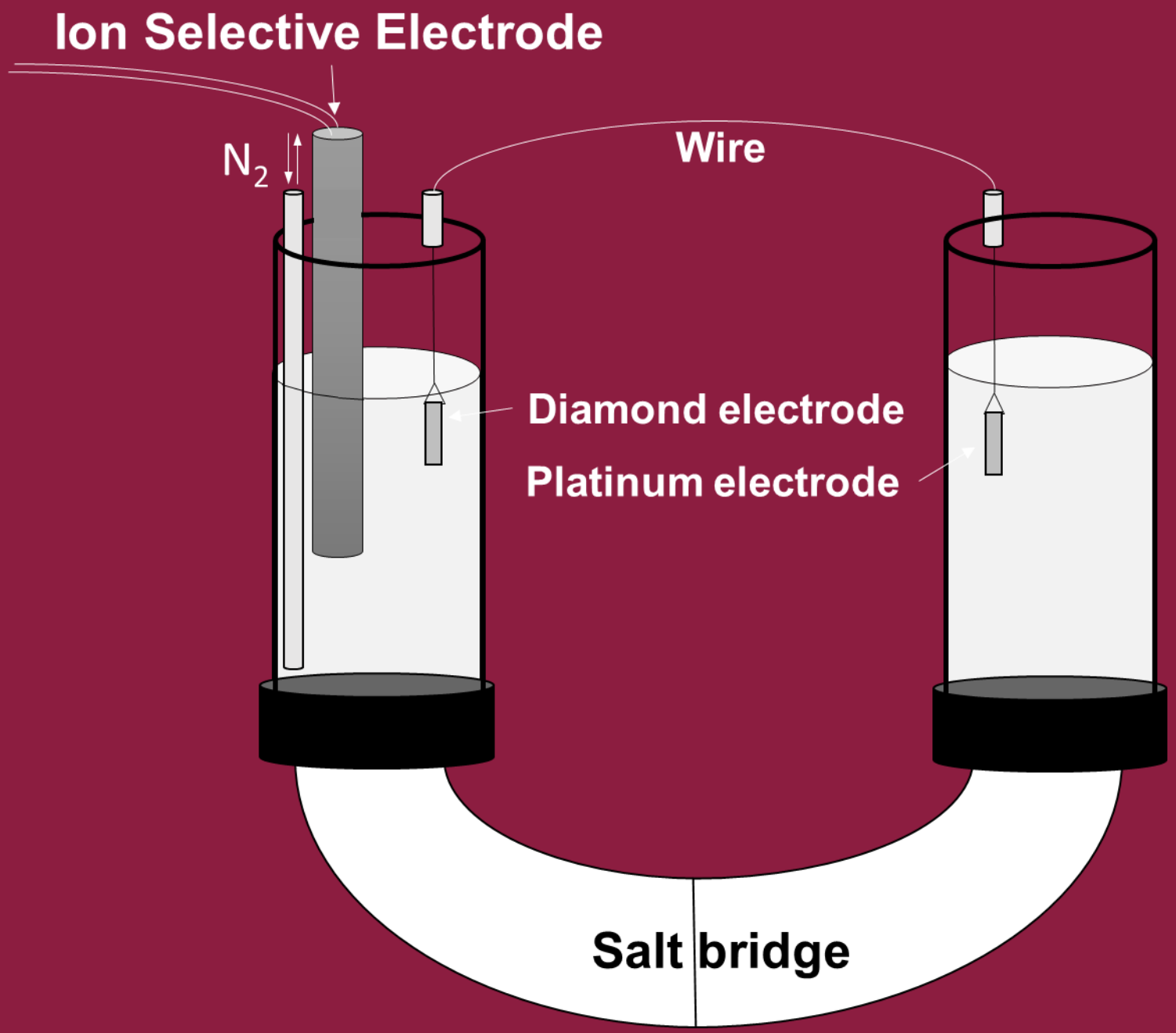
Emitted into vacuum



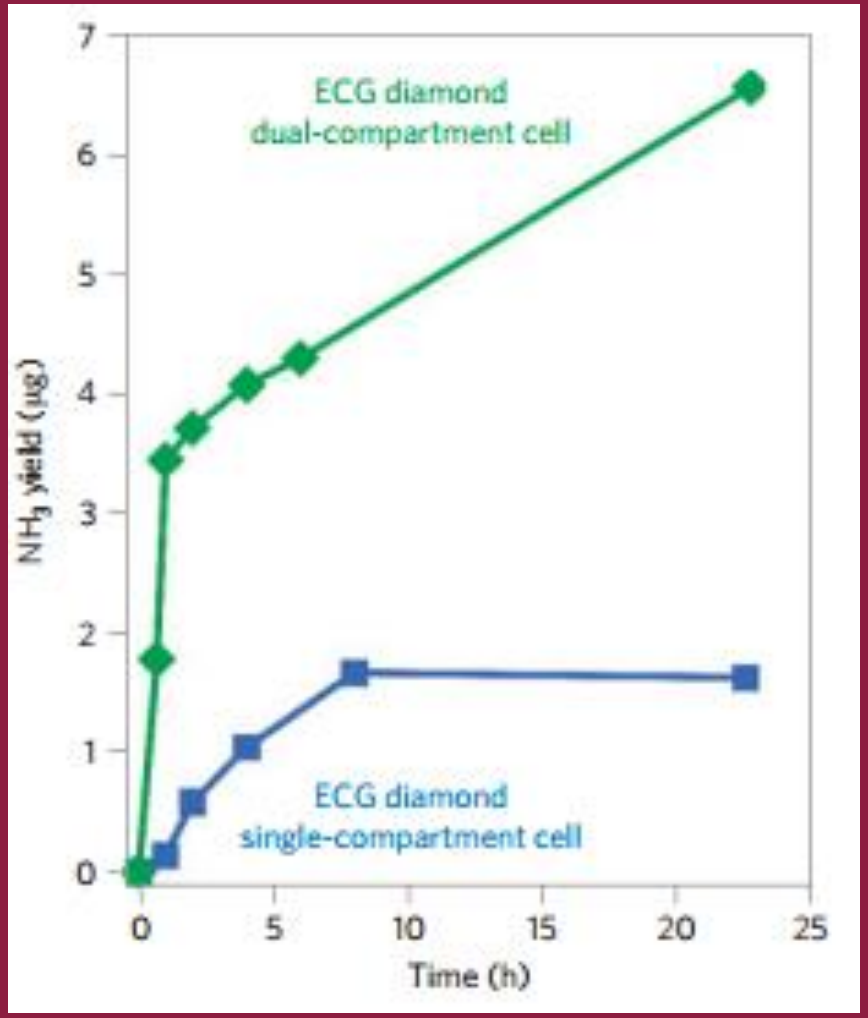
Zhu, et al.

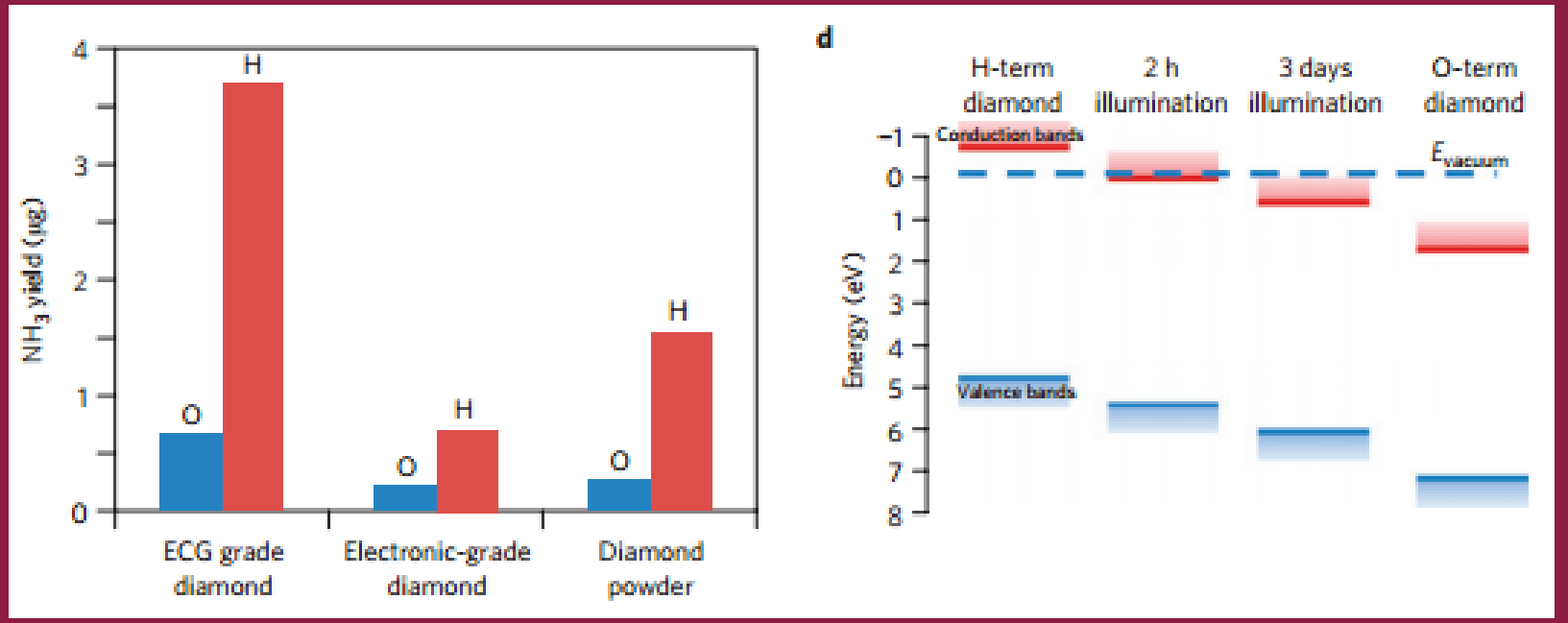
Photochemistry




Ion Selective Electrode
N_2
Wire
Diamond electrode
Platinum electrode
Salt bridge

Photochemistry





Zhu, et al.

Continuing Research

Reproduce results in visible light spectrum

Utilize physical properties to reduce effective work function

Photochemistry with Diamond

J. Barkl, A. Zaniewski and R. Nemanich

Department of Physics