

**University of Zurich
Department of Chemistry**

PhD Positions in Solar Fuels (Artificial Photosynthesis): Zurich, Switzerland

Information on the Project

One of the most important challenges of our time is securing and using energy in a sustainable manner. The sun offers the potential for harvesting enormous amounts of energy (the amount of solar power striking the earth's surface at any one instant is nearly 10,000 times greater than our present day power needs). The ability to capture even a small percentage of this hugely abundant resource in a cost-effective manner would render unnecessary the current reliance on CO₂ emitting fuel sources.

Artificial photosynthesis is a solution with tremendous promise. In analogy with nature's design, water is used as feedstock for protons and electrons that are used to generate hydrogen fuel, a process which is driven by the energy contained in the solar photons. The strategy of generating a fuel from sunlight precludes the problems associated with electricity storage, as the energy is stored directly in the form of chemical bonds. The energy contained in the fuel is available at any time and is decoupled from the intermittency of the sunlight striking the earth's surface.

Information about the Research Group

The University of Zurich is operating a major Research Priority Program on *Solar Light to Chemical Energy Conversion, LightChEC* (www.lightchec.uzh.ch). The "Molecular Approaches to Renewable Energies" group is a new group within the LightChEC project and the Department of Chemistry at the University of Zurich, and several positions are open. This group is headed by Dr. David Tilley, who was appointed as Assistant Professor (tenure-track) as of Feb 1, 2015. One area of research in the group will focus on the photoelectrochemistry of inorganic thin film light absorbers featuring both heterogeneous and molecular catalysts for visible-light-driven water splitting, exploring fundamental questions along the way towards making more efficient systems.

Major Responsibilities

The successful applicants will engage in inorganic materials synthesis (and perhaps some organic synthesis) to generate materials for photoelectrochemical water splitting. These materials will be characterized by electrochemical as well as physical methods (such as electron microscopy).

Qualifications

Applicants should have a Diploma or MSc degree in chemistry, physics, materials science, or a closely related field. We encourage applications from enthusiastic and creative individuals, with good oral and written communication skills in English.

Application

Please send your application including cover letter, CV, 1-2 page description of previous research experience, relevant diploma, and the names and contact details of two to three potential references in a single PDF file to Dr. David Tilley (david.tilley@chem.uzh.ch). Review of applications will begin immediately and continue until the positions are filled.

For Additional Information

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