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## 2-y Post-Doc position: Ultrafast 2D spectroscopy of transparent near-IR dye-sensitised solar cells

We are looking for a talented spectroscopist with a good knowledge of non-linear optics, and possibly femtosecond 2DES.

**Transparent near-IR dye-sensitised solar cells.** Within the context of developing fully transparent glasses acting as solar cells, the French consortium TRANSITION has made important progress recently with dye-sensitised solar cells (DSSCs) based on near-IR absorbing dyes [1-3]. In particular, we have been able to obtain the best performances in terms of power conversion efficiency (PCE) and average visible transmission (AVT) [1,2]. The next step addresses DSSCs with better performing near-IR dyes and solid state electrolytes, which should increase the PCE to up to 7%. However, fundamental questions about the ultrafast photo-physics of these cells still need to be resolved.

To this end, ultrafast spectroscopy is the tool of choice for investigating the carrier injection processes, and competitive processes like monomer-to-aggregate energy transfer. One central issue of this post-doc positions is to test by **2D electronic spectroscopy (2DES)** whether aggregates release electrons and thus contribute to the production of photo-current. That would disprove the common hypothesis that dye aggregates are loss channels, and would open new opportunities in terms of power conversion efficiency.

The position is located in the BIODYN team at the Strasbourg Institute of Physics and Chemistry of Materials (IPCMS, <https://www.ipcms.fr/en/equipe/biodyn/>). More details including salary can be found here: <https://emploi.cnrs.fr/Offres/CDD/UMR7504-CATBON-079/Default.aspx?lang=EN>

Candidates must hold a PhD in Physics or Physical Chemistry, and have a sound experience in ultrafast molecular spectroscopy and non-linear optics.

Applications should be sent ASAP to [stefan.haacke@ipcms.unistra.fr](mailto:stefan.haacke@ipcms.unistra.fr), including a CV, a letter of motivation and contact addresses of persons of reference. Earliest starting date is Oct, 1st, 2025.

[1] T. Baron et al., *Angewandte Chem.*, 61, e202207459 (2022); <http://onlinelibrary.wiley.com/>.

[2] W. Naim et al., *JACS Au*, 1, 409-426 (2021); <https://doi.org/10.1021/jacsau.1c00045>

[3] M. Kurucz et al., *ChemPhotoChem*, 8, e202300175 (2024); [doi://10.1002/cptc.202300175](https://doi.org/10.1002/cptc.202300175)