

The Laboratory for Organic and Inorganic Chemistry

# Seminar

Sunday, March 19<sup>th</sup> at 9:30 in the Seminar Room

## Prof. Jerome Waser

EPF Lausanne

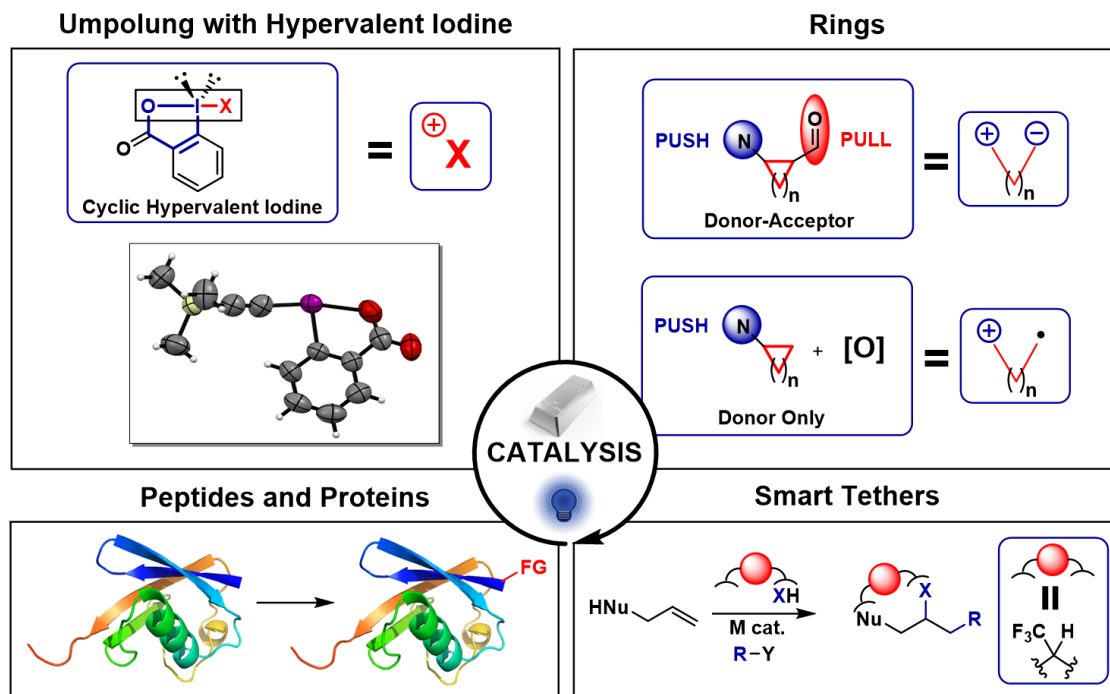
On the Topic of:

### **New Reactivity of Strained Rings and Hypervalent Bonds for Synthesis and Chemical Biology**

## New Reactivity of Strained Rings and Hypervalent Bonds for Synthesis and Chemical Biology

**Jerome Waser**

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The development of non-conventional organic synthons stands at the center of our research.<sup>1</sup> We harness the power of modern catalysis to unravel the reactivity of energy-loaded molecules, in particular hypervalent iodine reagents<sup>2</sup> and strained rings.<sup>3</sup> This unique reactivity can then be exploited both for the synthesis of small molecule building blocks and the modification of peptides and proteins. To tackle the issue of selectivity, we also further developed the concept of in situ tethering.<sup>4</sup>

In this presentation, focus will be on our most recent results in the synthesis and activation of strained ring systems<sup>3</sup> and the use of hypervalent iodine reagents for biomolecule functionalization.<sup>5</sup>

### References

(1) <https://www.epfl.ch/labs/lcso/research/>

(2) (a) D. P. Hari, P. Caramenti, J. Waser, *Acc. Chem. Res.* **2018**, *51*, 3212-3225. (b) E. Le Du, J. Waser, *Chem. Commun.* **2023**, *59*, 1589-1604.

(3) (a) F. de Nanteuil, F. De Simone, R. Frei, F. Benfatti, E. Serrano, J. Waser, *Chem. Commun.* **2014**, *50*, 10912-10928. (b) M.-M. Wang, T. V. T. Nguyen, J. Waser, *Chem. Soc. Rev.* **2022**, *51*, 7344-7357.

(4) (a) L. Buzzetti, M. Purins, P. D. G. Greenwood, J. Waser, *J. Am. Chem. Soc.* **2020**, *142*, 17334-17339. (b) S. Nicolai, U. Orzel, B. Muriel, P. D. G. Greenwood, L. Buzzetti, M. Puriš, J. Waser, *Synlett* **2021**, *32*, 472-487.

(5) E. M. D. Allouche, E. Grinhagena, J. Waser, *Angew. Chem., Int. Ed.* **2022**, *61*, e202112287.