

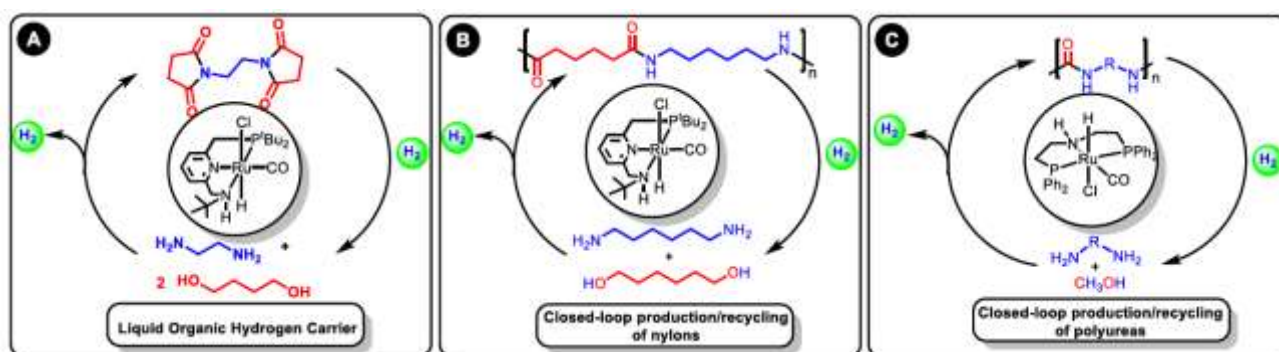
## Webinar

### Homogeneous (De)hydrogenative Catalysis for Circular Economy

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Reactions based on catalytic (de)hydrogenation are atom-economic, green, and sustainable routes for organic transformations and have been advocated as an important tool for circular chemistry.<sup>1</sup> This lecture will discuss recent discoveries of pincer catalysts and their applications to enable circular economy, for example: (a) discovery of a fundamentally new Liquid Organic Hydrogen Carrier (LOHC) based on the dehydrogenative coupling of 1,4-butanediol and ethylenediamine and the reverse reaction (Figure 1A);<sup>2</sup> (b) synthesis and depolymerisation of nylons (Figure 1B);<sup>3</sup> and (c) synthesis and depolymerisation of polyureas (Figure 1C).<sup>4</sup>



#### References:

1. A. Kumar,\* C. Gao, ChemCatChem, 2021, 13, 1105-1134.
2. A. Kumar, T. Janes, N. A. E. Jalapa, D. Milstein,\* J. Am. Chem. Soc., 2018, 140, 7453.
3. A. Kumar, N. von-Wolff, M. Rauch, Y. Q-Zou, G. Shmul, G. Leitus, L. Avram, D. Milstein,\* J. Am. Chem. Soc., 2020, 142, 14267.
4. (a) A. Kumar,\* D. Armstrong, G. Peters, M. Nagala, S. Shirran, Chem. Commun. 2021, 57, 6153; (b) A. Kumar,\* J. Luk, manuscript in revision (ACS Catal).

**Monday, Jul 5<sup>th</sup> 2021**

**4:00 PM**