

June 22, 2022  
Mitsui Chemicals, Inc.

## Winners of the 2022 Mitsui Chemicals Catalysis Science Awards

Mitsui Chemicals, Inc. (Tokyo: 4183; President & CEO: HASHIMOTO Osamu) is pleased to announce the winners of the 2022 Mitsui Chemicals Catalysis Science Award and the Mitsui Chemicals Catalysis Science Award for Creative Work.

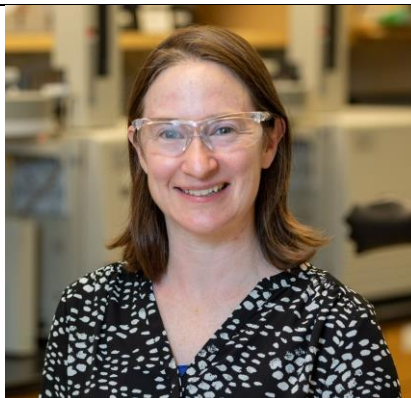
Established in 2004, these awards aim to contribute to the sustainable development of chemistry and the chemical industry by recognizing researchers who have made outstanding achievements in catalysis science. The first winners were awarded in March 2005.

Now in its 9th iteration, this year's awards again saw numerous applicants.

The award ceremony, as well as lectures from the winners, will be held in autumn 2022. (For further details, please see the addendum below.)

### Winner of the 2022 Mitsui Chemicals Catalysis Science Award

**Melanie S. Sanford**  
Professor  
University of Michigan, USA



### Winners of the 2022 Mitsui Chemicals Catalysis Science Award for Creative Work

**Todd K. Hyster**  
Associate Professor  
Cornell University, USA



**Robert J. Phipps**  
Associate Professor  
University of Cambridge, UK



## Addendum

### 1. Overview of the awards

#### Winner of the 2022 Mitsui Chemicals Catalysis Science Award

<p style="text-align: center;"><b>Melanie S. Sanford</b> Professor University of Michigan, USA</p> <p style="text-align: center;"><b>“Developing late transition metal catalyzed reactions for carbon-carbon and carbon-heteroatom bond formation”</b></p>
<p>Dr. Melanie S. Sanford has developed late transition metal catalysts for C–H functionalization reactions. She is a pioneer and has had a major impact on research in her field. She has also developed palladium and copper catalysts for fluorination and radiofluorination reactions, and written seminal studies of their mechanisms. She also developed Pd and Ni catalysts for base-free decarbonylative cross-coupling reactions. Alternative to aryl halides, carboxylic acids and their derivatives have been used as electrophiles in the reactions. She has contributed greatly to the development of catalysis science.</p>

#### Winners of the 2022 Mitsui Chemicals Catalysis Science Award for Creative Work

<p style="text-align: center;"><b>Todd K. Hyster</b> Associate Professor Cornell University, USA</p> <p style="text-align: center;"><b>“Photoenzymatic catalysis in organic synthesis”</b></p>	<p style="text-align: center;"><b>Robert J. Phipps</b> Associate Professor University of Cambridge, UK</p> <p style="text-align: center;"><b>“Development of novel strategies for selectivity control in catalytic reactions”</b></p>
<p>Dr. Todd K. Hyster has developed a new biocatalytic method to achieve highly efficient radical asymmetric synthesis by combining visible light activation of cofactors at the active site of enzymes, opening a new field that combines organic and biological chemistry. He has recently succeeded in asymmetric intra- and inter-molecular C-C bond coupling, thereby expanding the versatility of the methodology he has developed. His developments are expected to bolster environmentally friendly manufacturing processes of fine chemicals using enzymes.</p>	<p>Dr. Robert J. Phipps has developed meta- and para-selective C-H activation and cross-coupling reactions, as well as asymmetric C-H activation reactions, by a reaction design based on an ion pairing interaction between transition metal catalysts and substrates. Furthermore, the ion pairing strategy was successfully applied to enantiocontrol of radical reactions, demonstrating its synthetic utility.</p>

### 2. Award ceremony and lectures by the winners

Mitsui Chemicals will be holding a ceremony for the Catalysis Science Award and the Catalysis Science Award for Creative Work along with commemorative lectures as part of a catalysis science session at the “12th CSJ Chemistry Festa 2022”.