

Low-Carbon Solutions for Green Carbon Conversions

John van Geuns Foundation Lecture by

Prof. Dr. Yuhan Sun

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Achieving green carbon conversion is closely related to climate change. Ideally, we would like to use CO₂ as our carbon source, but the fact that the carbon cycle is asymmetric makes this a tough job. Thus, CO₂/CO utilization, as the central part of C1 chemistry, has become one of the key challenges for our society. Similarly, both energy storage and sustainable hydrogen must be optimized for carbon reduction, because renewable energy, as a kind of low-density energy, needs to give stable power for high quality utilization. In this case, hydrogen and its related storage carriers turn out to be more important. Nanometric and sub-nanometric catalysis plays a key role in the development of new technologies for those topics, which will be presented in the lecture and the discussion.

Yuhan Sun obtained his B.S. in 1983 from Zhengzhou University, and his Ph.D degree from CAS Institute of Coal Chemistry (ICC) in 1989. He then joined the same institute from 1989 to 2013 as associate professor and professor. During this period, he worked at Brunel University and at CalTech as a visiting professor from 1992 to 1995 and from 1999 to 2000, respectively.



Prof. Sun served as the Director of the State Key Lab of Coal Conversion in 1996-2002, the General Director of CAS Institute of Coal Chemistry in 2000-2008, and the Board Chairman of CAS-BP Clean Energy Technology Center in 2009-2014. In 2009, he moved to the Shanghai Advanced Research Institute (VP 2013-2017). Since 2014 he is the director of the CAS Key Lab for Low Carbon Conversion Science and Engineering. His research interests include C1 chemistry on coal/natural gas-based synfuels and chemicals, catalysis and engineering for CO₂ utilization, application of nano-materials in green chemistry and optical films, and finding strategic solutions for clean energy. He has published >360 papers on peer-reviewed journals and was awarded >130 patents.