

Dr Run-Cang Sun is the 2020 Anselme Payen Award Winner



The 2020 Anselme Payen Award winner is Dr Run-Cang Sun, a distinguished Professor and the director of the Center for Lignocellulose Chemistry and Biomaterials, Dalian Polytechnic University, Dalian, China. Dr Run-Cang Sun received his PhD in 1997 from University of Wales, Bangor, UK. He then worked at the University of Wales, UK until end of 2007 (Part time since 2000). He was also awarded a distinguished Professor at State Key Laboratory of Pulp and Paper Engineering (Director, 2008-2015), South China University of Technology, Guangzhou, China in 2000. Prof. Sun moved to the College of Materials Science and Technology (Dean, Oct. 2011-Sep. 2015; Director of Beijing Key Laboratory of Lignocellulosic Chemistry), Beijing Forestry University, Beijing, China from 2007 to 2018. Since 2019 he has been working at Dalian Polytechnic University, Dalian, China. He is a fellow of the Royal Society of Chemistry (FRSC, 2003). Dr Sun will be presented with the award at the ACS Cellulose and Renewable Materials Division Awards Banquet following a symposium in his honour during the 2021 ACS Spring National Meeting in San Antonio, TX.

Dr Sun has made outstanding contributions to efficient fractionation and high-value utilization of lignocellulosic materials for production of sustainable biofuels and biomaterials. Several of his novel techniques have been successfully applied at industrial scale. His major scientific achievements include:

- Clarification of the cell wall complexes in lignocellulose, and the distribution of lignin, hemicelluloses, and cellulose in the cell walls;
- Isolation of hydroxycinnamic acids from plant cell walls and determined the linkages between hydroxycinnamic acids and lignin or hemicelluloses;
- Development of a two-step method for the isolation of lignin free of hemicelluloses, as well as elucidated the structural features of the lignins and the linkages between lignin and hemicelluloses
- Homogeneous modification of hemicelluloses to produce novel biomaterials, such as intelligent hydrogels for drug delivery, nanostructured DNA carries and degradable films for food packaging;
- Degradation of cellulose in ionic liquids, as well as development of functional biomaterials based on cellulose;
- Environmentally friendly fractionation of the cell wall components into cellulose, hemicelluloses and lignin, and their subsequent conversion into biofuels, biomaterials, and biochemicals at industrial scale.

Dr Sun currently holds 119 Chinese National patents on the conversion of lignocelluloses into biomaterials and biofuels, published 835 peer-reviewed articles in international journals and 35 book/book chapters, with more than 36,000 citations. He is a Co-Editor-in-Chief of *Industrial Crops and Products*, Associate Editor of *Carbohydrate Polymers* and *Journal of Biobased Materials and Bioenergy*, and a member of editorial board in *ChemSusChem*, *Journal of Agricultural and Food Chemistry*, *Cellulose Chemistry and Technology*, *BioResources*, *Bioresources and Bioprocessing*, etc.