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Chunshan Song Wins the 2010 Henry H. Storch Award in Fuel Chemistry from ACS

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Chunshan Song, distinguished professor of fuel science in the Department of Energy and Mineral Engineering and Director of EMS Energy Institute at Penn State, was selected to receive the Henry H. Storch Award in Fuel Chemistry at the American Chemical Society (ACS) Spring 2010 national meeting held in March 2010. He received this prestigious award in recognition of his outstanding contributions to fuel science especially in the areas of clean fuels, catalysis, and CO_2 capture and conversion research.

The Henry H. Storch Award, co-sponsored by the Division of Fuel Chemistry of the ACS and Elsevier Ltd., is given annually to recognize an individual in the field of fuel science for an exceptional contribution to research on the chemistry and utilization of hydrocarbon fuels. Special consideration is given to innovation and novelty in the use of fuels, characterization of fuels, and advances in fuel chemistry that benefit the public welfare or the environment. The award is the highest honor for research awarded by the ACS Fuel Chemistry Division.

Song was recently named a Distinguished Professor of Fuel Science by Penn State's Office of the President. He is also professor of chemical engineering and Associate Director of the Penn State Institutes of Energy and the Environment. He received a BS in chemical engineering in 1982 from Dalian University of Technology, China, and a MS in 1986 and PhD in 1989 in applied chemistry from Osaka University, Japan. He worked at the Research Center of Osaka Gas Company in Japan prior to joining Penn State in November 1989.

Song is internationally recognized for his original and innovative contributions to clean fuels, catalysis and CO_2 capture and conversion research. His early research at Penn State on catalytic coal liquefaction and the effects of drying on coal conversion at low temperatures led to a new method for preparing highly active dispersed catalysts using a water and sulfide precursor. Based on this discovery, further fundamental studies using probe molecules resulted in two patents licensed to industry for inventions related to nano-sized ultra-high-surface metal sulfide catalysts. From his efforts to make better use of coal-derived aromatics for value-added chemicals, he designed shape-selective alkylation catalysts for synthesis of precursors for advanced polymers and engineering materials from naphthalene, which have also been patented and licensed to industry. He has made major contributions to the development of coal-based advanced thermally stable jet fuels through his work on fundamental chemistry concerning the effects of intrinsic fuel composition and structure on thermal degradation of jet fuels, and his work on model compounds studies related to stable bicyclic structures and hydroaromatics and their tailored production through catalysis. These developments were part of the large, 20 year, U.S. government-funded jet fuel project led by Harold Schobert at Penn State, which has been scaled up to pilot plant production. For ultra-clean fuels and fuel cells, Song and his group devised an innovative approach to selective adsorption for removing sulfur from liquid hydrocarbon fuels over solid surface without using hydrogen. This approach has been licensed to industry as well and is already used for making prototype systems.

Song?s group recently developed a novel approach to CO_2 capture by ?molecular-basket sorbents? consisting of nanoporous matrix and functional polymers with superior capacity and selectivity. In addition, his group developed sulfur-tolerant and carbon-resistant bimetallic and trimetallic catalysts for low-temperature steam reforming of liquid fuels and non-pyrophoric catalysts for oxygen-assisted water gas shift. He recently proposed a new design concept of sulfur-tolerant noble metal catalysts for low-temperature hydrotreating and dearomatization for ultra clean fuels.

Song is an active leader in hydrocarbon processing research and has been elected as Chair of the Fuel Chemistry and the Petroleum Chemistry Divisions of American Chemical Society as well as Chair of the Advisory Board for the International Pittsburgh Coal Conference. He has also served as chair or co-chair for over 35 international symposia, and is currently on eight research journal advisory boards, including Energy & Fuels, Catalysis Today, Applied Catalysis B: Environmental, RSC Catalysis series, Research on Chemical Intermediates, Journal of Fuel Chemistry and Technology, Acta Petrolei Sinica, and Coal Conversion. In addition, he serves on the scientific advisory boards for several international conference series and for several R&D organizations worldwide.

A prolific author of many high-impact publications, Song has delivered 40 plenary or keynote lectures at international conferences and 190 invited lectures worldwide. He has 170 refereed journal articles (which received over 4000 citations), 6 refereed books, 25 book chapaters, 11 special journal issues, 20 patents and patent applications, and over 280 conference papers. He has also received a number of major awards, including the Fulbright Distinguished Scholar from US-UK; the Herman Pines Award for Outstanding Research in Catalysis from Catalysis Club of Chicago in North American Catalysis Society; the Chang Jiang Scholar from the Ministry of

Education of China; Most Cited Authors in Catalysis from Elsevier; Outstanding Scholar Overseas from the Chinese Academy of Sciences; the Distinguished Catalysis Researcher Lectureship from Pacific Northwest National Laboratory; the Robinson Distinguished Lectureship from University of Alberta, Canada; the NEDO Fellowship and AIST Fellowship Awards from Japan; and Distinguished Service Awards from the American Chemical Society?s Petroleum Chemistry Division, and from the Annual International Pittsburgh Coal Conference. Within the Pennsylvania State University, he has received the Wilson Award for Excellence in Research, the Faculty Mentoring Award, Inventor Incentive Awards and the Materials Science & Engineering Service Award. . In addition, Song has held visiting professorships with Imperial College London, University of Paris VI, Tsinghua University, Dalian University of Technology, Taiyuan University of Technology, Tianjin University, and Dalian Institute of Chemical Physics as well as Institute of Coal Chemistry within Chinese Academy of Sciences.

A Storch Award Symposium in Honor of Chunshan Song will be held at ACS Fall 2010 National Meeting in Boston during August 22-26, 2010.

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