上海光伏展SNEC2020研讨会演讲

演讲题目（中文）：光伏农业系统技术创新和实验与示范

演讲题目（英文）：Photovoltaic Agriculture System Innovation and Demonstration

摘要（中文，描述论文性质、范围、内容、结构、重点以及意义）：

光伏农业的核心思想是在农地上实现光伏发电，同时仍然能够不影响农地的农作物生产。2016～2019年，中国各地将光伏与扶贫结合，光伏农业获得了迅猛发展，总的装机容量超过30GW。但在不影响农作物正常生长的前提下同时进行光伏发电仍然是一个尚未真正解决的难题。中国科大项目团队2016年开始研发新型光伏农业系统，已经建立了多个实验基地，包括两种新型光伏农业系统。2019年在新型光伏组件下方种植的洋姜的亩产量达到2400公斤，超过同一品种正常田地亩产量10%~20%。同时新系统每亩地每年能实现光伏发电3万度。实验结果还展示改进的光伏农业可以大量节约农地灌溉用水，特别值得在阳光猛、干旱缺水的地域大面积推广。

摘要（英文）：

The core idea of photovoltaic agriculture (APV) is to realize unaffected crops growth and electricity generation on the same land simultaneously. From 2016 to 2019, photovoltaic and poverty alleviation were combined throughout China, APV has achieved a rapid development. Total capacity installed has been over 30 GW. But generating electricity without influencing the growth of crops has still been an unsolved problem. The USTC group has begun to develop new photovoltaic agriculture systems since 2016 and have established a few experimental farms and developed two new photovoltaic agriculture systems. From the results of the whole year (2019) planting control experiment, the yield per mu (1/15 acre) of Jerusalem artichoke planted in these farm reached 2400kg, which is 10% to 20% more than the yield of traditional farm. Besides, the new APV systems achieve photovoltaic power generation of 30,000 kWh per mu per year. It also shows that the APV system can save a lot of irrigation water, which is a particular value to promote in many strong sunlight and water-deficient area.

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议题范畴：光伏农业，光伏创新应用

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演讲人简介（中文）：

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教授。他提出并发展的新型光伏农业系统，2017年获得被誉为科技创新“奥斯

卡”的美国R&D100奖。2018年获得世界可再生能源技术协会（SET）年度创

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演讲人简介（英文）：

Wen Liu is currently a professor and doctorial tutor in the Department of Optics and Optical Engineering, School of Physics, University of Science and Technology of China, and he has been awarded as “the Yangtze River Scholar Professor”. He proposed and developed a new photovoltaic agriculture system, which won the American R&D100 award in 2017, and the award is known as the “Oscar” for technological innovation. In 2018, he won the annual innovation award of the World Society of Sustainable Energy Technologies (WSSET).

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