



Heliostat Consortium Seminar Series

Brought to you by the Resource, Training, and Education (RTE) topic area



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Host: Dr. Rebecca Mitchell, National Renewable Energy Laboratory

Title: LSAMP Summer Experience: A Cleaning Mirror Assessment with Reflectance

When: November 15th
11am-12pm MST

Zoom:
<https://nrel.zoomgov.com/j/1616113709>

Abstract:

Concentrating Solar Power (CSP) plants use mirrors to reflect and concentrate sunlight onto receivers that collect solar energy and convert it to heat, which can then be used to produce electricity or stored for later use. There are variations in the configuration of these plants, one of which is a solar tower. A solar tower consists of heliostats, a device that continually tilts a mirror or multiple mirror facets to track the sun's movement and reflect sunlight toward the receiver on top of the tower. It has the following components: a reflective surface, a control system, and a mounting and tracking system. CSP plants are mainly located in arid or semi-arid regions where high dust emissions and other environmental factors lead to the soiling of solar reflectors. The soiling of the reflectors diminishes the optical efficiency of heliostats, leading to lower yields for the plants. To mitigate soiling, there are conventional cleaning methods in practice.

Bios:

Kyla Hampton is a dual degree engineering student as a part of the Atlanta University Center Consortium Dual Degree Engineering Program. This program is allowing Kyla to obtain a Bachelor of Science in Chemistry from Clark Atlanta University and a Bachelor of Science in Chemical Engineering from Northeastern University as a participating dual degree engineering program institution. Kyla transferred to Northeastern University in the fall of 2021 and has completed internships and co-ops with ExxonMobil Chemicals and General Electric Appliances. Additionally, Kyla has also participated in undergraduate research in Polymer Science and is a member of National Society of Black Engineers (NSBE) and the Society of Women Engineers (SWE).

Courtney is from Houston, Texas and is currently a Dual Degree engineering student in the Atlanta University Center Consortium Dual Degree Engineering Program. Pursuing a Bachelors of Science in Chemistry from Clark Atlanta University and a Bachelors of Science in Chemical Engineering from Northeastern University. She will be graduating in the Spring of 2024. One of her most recent research experiences involved learning about CSP (Concentrated Solar Power), with a specific focus on heliostat cleaning. This opportunity allowed her to delve deeper into the field of renewable energy and gain hands-on experience in a cutting-edge area of research. In addition to her studies, She is actively engaged in various organizations on campus. She's a proud member of NSBE (National Society of Black Engineers), SWE (Society of Women Engineers), LSAMP (Louis Stokes Alliances for Minority Participation Scholar), and Sisters in Solidarity. These organizations have provided her with invaluable networking opportunities and have allowed her to connect with like-minded individuals who share a passion for STEM fields.