



Abstract

One of the primary costs in running a greenhouse is climate control. Plants require a warm, lower humidity environment for healthy growth and lower energy consumption. Traditional air conditioning methods common in greenhouses have inefficiencies that make climate control costly. Liquid desiccant air conditioning systems have shown to be more efficient than traditional systems in reducing both sensible and latent loads in commercial buildings. They can be expected to perform even better in a greenhouse application, which requires a higher temperature than commercial buildings. A traditional system must cool the air past its dew point to dehumidify and then heat the now-dry air to the ideal temperature. In the proposed system, a liquid desiccant material adsorbs moisture from the air without the need to cool it and the heat of sorption is added to the air. This research monitors the energy consumption and environmental conditions of a greenhouse in Huron, Ohio in order to compare the performance of a liquid desiccant air conditioning system with that of a traditional system.

Liquid Desiccant Air Conditioning in Greenhouses

**MacKenzie Hull**

**February 5, 2021 | 2:00-3:00 PM**

Zoom meeting ID: 998 2092 1442

<https://osu.zoom.us/j/99820921442?pwd=d3hpTS9wYnc2Z29uZDR4NE4wNy81UT09>

A person smiling for the camera

Description automatically generated with low confidence

For more information, contact Heather Lochotzki ([Lochotzki.7@osu.edu](mailto:Lochotzki.7@osu.edu)) or visit <https://esgp.osu.edu/>

**Environmental Science Graduate Program**

**Student Seminar Series**