Energy Efficient Dehumidification by Solar Driven Liquid Desiccant Systems

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Why Dehumidification?
Why Dehumidification?
Why Dehumidification?

• How it feels vs. actual temperature

• Higher humidity at high temperatures = extreme discomfort

• Turn up the air conditioning

• $$$, Electricity, Environment

• But...
Why Dehumidification?

• What if you could decrease the humidity?

**NOAA's National Weather Service**

**Heat Index**

**Temperature (°F)**

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**Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity**

- **Caution**
- **Extreme Caution**
- **Danger**
- **Extreme Danger**
Why a Desiccant System?

- Renewable and easy to make
- Cheap
- Safe
- Can be driven by solar hot water tank
Liquid Desiccant System Design
Current Setup

- Data Acquisition System
- Absorber and Recharger Box
- Runs itself
Goals

• Increase the efficiency of the current system

• Fit into mechanical room

• Visible decrease power consumption

• Display results and system to inform and educate public
Preliminary Testing

Test 1 Humidity Levels of Air

Relative Humidity (%)

Test 1 Temperature Levels of Air

Temperature (°F)
Next Steps

• New data acquisition system

• Installation of recharge loop

• Testing

• Installation of system into the Interlock House
Credits and Grant Acknowledgements

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