

Technical session topics: 9. Humidity and comfort control in hot, humid climates.

### **Dehumidifier Using Lithium Chloride Aqueous Solution**

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#### **Abstract**

Recently, the IAQ (Indoor Air Quality) problem becomes a problem by hospital infection and chic house syndromes, etc. at the global scale. It is possible that the dehumidifier using lithium chloride aqueous solution removes smell, hazardous gas and bacteria in the air with humidity control. The following were studied for the purpose of the performance enhancement of the equipment: removal of smell, hazardous gas and bacteria, etc. by this dehumidifier. To obtain the data of performance enhancement, the following were measured: pressure loss, heat transfer, mass transfer by a packing material of this dehumidifier. The empirical formula on pressure loss, heat transfer, mass transfer by a packing material of this dehumidifier was obtained. By changing flow rate of lithium chloride aqueous solution, the number of bacteria in entrance and exit of this dehumidifier was examined. Bacteria were not detected from after dehumidifier starting operation 90 minutes. In the dehumidifier using lithium chloride aqueous solution, it was proven that there was sufficient sterilizing power. Furthermore, minimum inhibition concentration (MIC) of some kinds of surface-active agents as additive of lithium chloride aqueous solution using bacteria sterilizer were examined.