

Undergraduate Thesis and Co-Op Work

Thermal and Fluid Sciences: Infrared heating equipment (Research Inc. 1992-1994), and development of an air-to-air heat exchanger evaluation facility ('94-'95), fulfilling requirements for undergraduate honors.

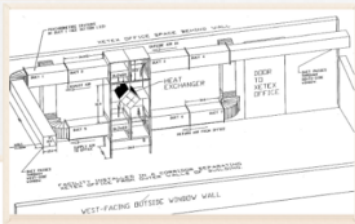


Bachelor's in Mechanical Engineering

Emphasis in thermal-fluid sciences, design and controls

Development of an Air-to-Air Heat Exchanger Evaluation Facility

Undergraduate Honors Thesis
Submitted by: Michael J. Tienness
July 28, 1995
Advisor: Professor E. M. Sparrow, Mechanical Engineering Department
Company support: Xerox, Incorporated, Minneapolis



on 3: Total Effectiveness - Enthalpy Exchangers

$$\epsilon = \frac{h_{a1} - h_{a2}}{h_{a1} - h_{a2,\min}}$$

where
 h_a = moist air enthalpy per unit mass of dry air,
 \dot{m}_{a1} = mass flow of dry air, stream 1 and
 $\dot{m}_{a2,\min}$ = mass flow of dry air, minimum flow stream.

on 4: Mass Transfer Effectiveness - Enthalpy Exchangers

$$\epsilon = \frac{\omega_1 - \omega_2}{\omega_1 - \omega_{2,\min}}$$

where
 ω = specific humidity,
 \dot{m}_{a1} = mass flow of dry air, stream 1 and
 $\dot{m}_{a2,\min}$ = mass flow of dry air, minimum flow stream.

Shrink Tubing Furnace for Wire Harness Assembly: Research Incorporated Model 4825 Tube Toaster Design Progress Report

