

## C315699 : MAJOR MECHANICAL ENGINEERING

KEY WORD: LAMINAR / RIGHT TRIANGULAR / HEAT FLUX CONSTANT

ANUSORN CHINSUWAN : LAMINAR FORCED CONVECTION IN A RIGHT  
TRIANGULAR DUCT WITH CONSTANT HEAT FLUX. THESIS ADVISOR :

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The equipment was designed and constructed for the investigation of laminar forced convection in the right-angled isosceles triangular duct with simultaneously developing velocity and temperature profiles with the thermal boundary condition of constant heat flux. Air was the heat transfer medium. Experimental results were obtained and compared with the existing numerical solutions. Comparisons show that experimentally obtained Nusselt Numbers at the high length-hydraulic diameter ratio are higher than those predicted from numerical solutions, moreover those experimental Nusselt Numbers are found to be lower than the numerical solutions at low Reynolds Number regions. An empirical formula, covering laminar region, is suggested for adoption in heat exchanger designing and development.