

EFFECT OF ANNEALING ON TEMPERATURE COEFFICIENT OF RESISTANCE OF Cu-Ni FOIL STRAIN GAUGE

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Near zero Temperature Coefficient of Resistance (TCR) is an increasing concern in strain gauge manufacturing industry. The purpose of this study is to investigate the connection between TCR of strain gauge and annealing temperature of the foil which used in manufacturing of the gauge. Under non oxidizing annealing environment, Constantan foils were heat treated and TCR of the strain gauges were calculated in the range of -10°C to 40°C. The TCR values were shifted from negative to positive with annealing temperature. This study definitively answers the question regarding selection of annealing temperature of Constantan foil for the manufacturing of strain gauges with near zero TCR.

Keywords: Temperature coefficient of Resistance, Strain gauge material, Electrical resistance