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機械工学科
Department of Mechanical Engineering

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金属材料（銅タングステン合金など）における温度伝導率（最大117mm²/s）の測定

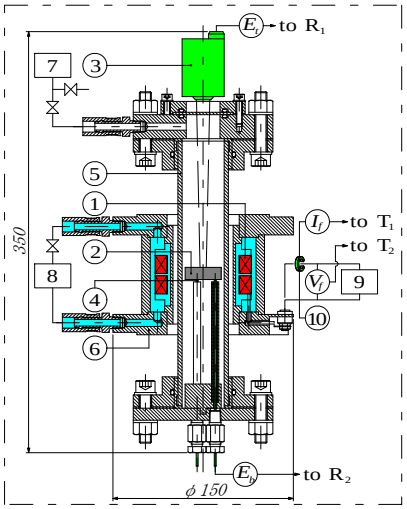
研究の目的

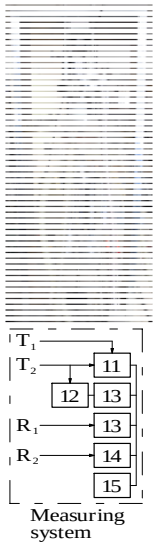
熱負荷を受ける機械
↓
金属材料など（合金，FGM，C/C）
↓
熱応力（熱伝導と運動）評価
↓
温度伝導率の温度依存性

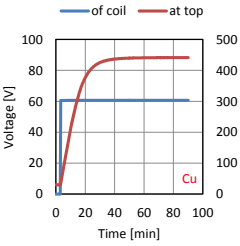
熱伝導率
温度伝導率 $a = \frac{\lambda}{\rho c}$ 比熱
密度

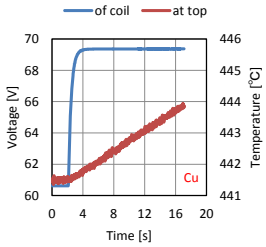
測定方法1

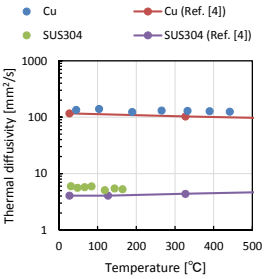
誘導加熱　傾斜機能材料（FGM，銅／タングステンなど）







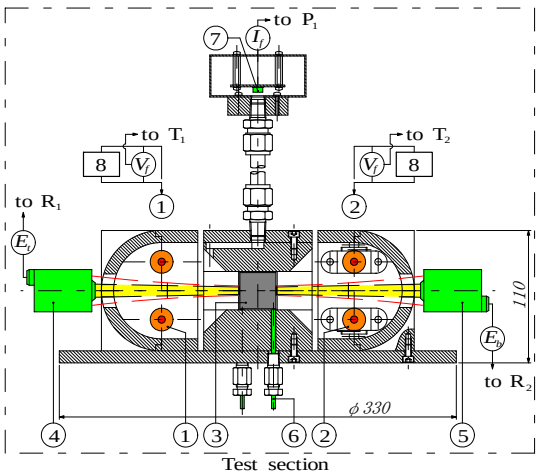


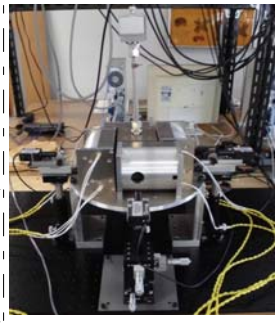


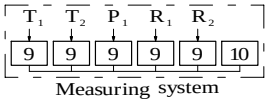
$$a(x) = \frac{\lambda(x)}{\rho(x)c(x)}$$

測定方法2

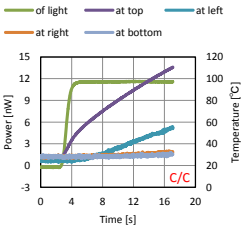
赤外線加熱　炭素繊維強化炭素複合材料（C/C）

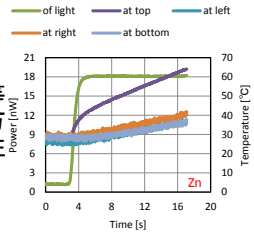


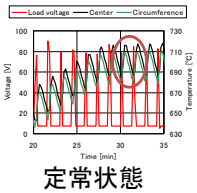
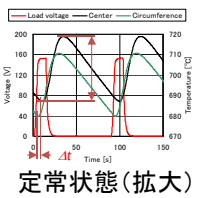
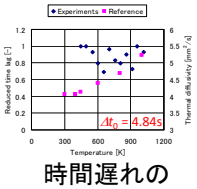
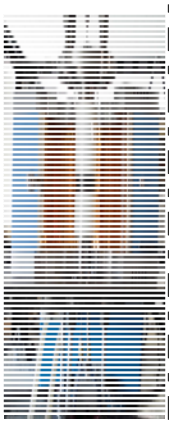
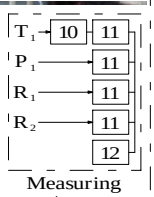
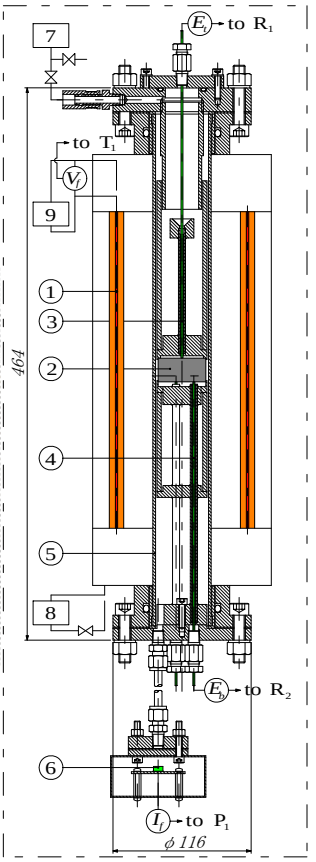




$$a = \begin{bmatrix} a_{xx} & a_{xy} \\ a_{yx} & a_{yy} \end{bmatrix}$$





測定方法3

赤外線加熱　合金（SUS304）