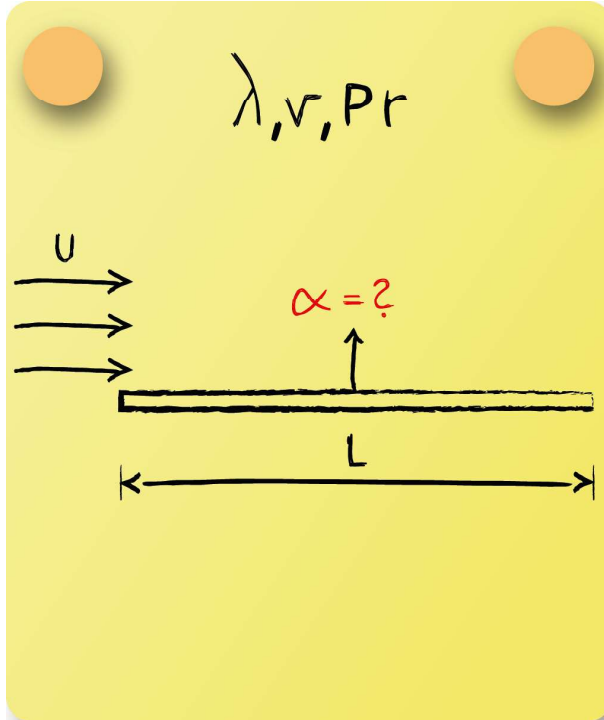


## Heat Transfer Correlation 4.1



A fluid streams over a flat plate.  
Calculate the mean heat transfer coefficient  $\bar{\alpha}$ .

Reynolds number:

$$\text{Re}_L = \frac{u \cdot L}{\nu} = 6.52 \cdot 10^5$$



Nusselt number:

$$\overline{\text{Nu}}_L = 0.036 \cdot \text{Pr}^{0.43} \cdot (\text{Re}_L^{0.8} - 9400) = 1.10 \cdot 10^3$$

Heat transfer coefficient:

$$\bar{\alpha} = \frac{\overline{\text{Nu}}_L \cdot \lambda_f}{L} = 2.82 \text{ W/m}^2\text{K}$$