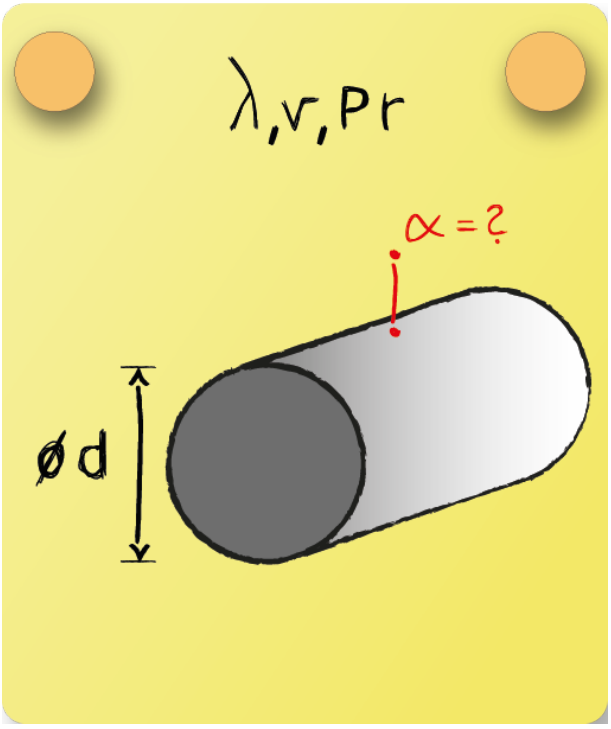
Heat Transfer Correlation: Task 17



The image describes a cylinder of diameter d and a constant temperature T_W which stays stationary in a non-moving ideal gas of temperature T_F.

1 HTC.21: $\overline{Nu_d} = 0.13(Gr_d Pr)^{1/3}$ for $10^9 < G_d Pr < 10^{12}$ with $\beta = \frac{1}{T_\infty} = \frac{1}{T_F}$ (ideal gas)

2 Results: $Gr_d = 2.47 \cdot 10^9$ $\overline{Nu_d} = 518.73$ $\overline{\alpha} = 376.08$

3 **Important:** Use temperatures in Kelvin!