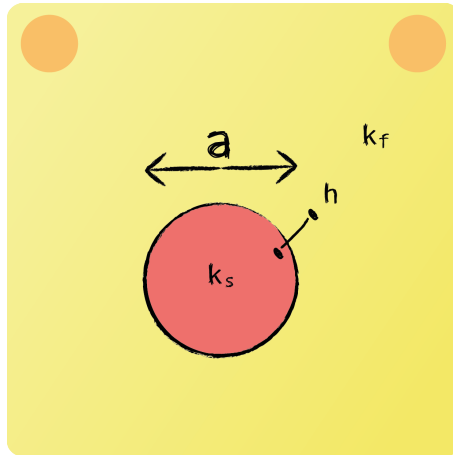


Lecture 06 - Biot Number 03

Give an expression for the Biot number Bi, for a sphere subjected to convection.



The characteristic length of a sphere:

$$L_c = \frac{V}{A_s} = \frac{\frac{4}{3}\pi \left(\frac{a}{2}\right)^3}{4\pi \left(\frac{a}{2}\right)^2} = \frac{a}{6}$$

Biot number:

$$\text{Bi} = \frac{hL_c}{k_s} = \frac{ha}{6k_s}$$