

# Assignment

A steel wire of length 4m is stretched through 2mm. The area of cross section of the wire is  $2\text{mm}^2$ . Given,  $Y_{\text{steel}} = 200\text{GPa}$ . Calculate the elastic potential energy stored in the wire.

Ans) **Elastic potential energy = energy density  $\times$  volume**

$$= 2.5 \times 10^4 \times (2.0 \times 10^{-6}) \times 4.0\text{J} = 20 \times 10^{-2} = 0.20\text{J}.$$