Week 2

14 October 2019 22:30

Write summary about the convection heat transfer and explain why increasing a simgle plan glass doen not increase the total residence . What mistakes you mad in class . Solve the problem with thickness of 13mm for air gap and 6 mm for glass.
Convection heaat transfer not related to the L beacuse in resistance we do not consider about it and h A are two important factors.in convention the speed of air which is shown by h is important it has 2 way natural and with fans. However the convection the material is not important there is a factor in conduction which called k and related to material. Unfortunately in class i did bigest mistake and mixed up the conduction and convection.
A=0.8×1.5= 1.2 m2
L air= 13 mm= 0.013 m
L glass = 6mm=0.006m
K glass =0.78w/mc
K air= 0.026 w/mc
h 1 = 10 h2= 40
R total =R conv1 +R cond1 +R cond2+ R cond 3+R con2
R conv1= 1/hA =1/10×1.2= 0.083 c/w
R cond 1 =L/KA= 0.006/0.936=0.0064
0.00641
R cond2= 0.013/.026×1.2=0.416
R cond3 = 0.00641
R conv2=1/40×1.2=0.0208
R total= 0.532
Q total= T -T/R total 20-(-10)/0.532= 56.39W
Q total=T-T2/R conv+Rcond 20-T2/0.0833 +0.0064 =56.39
T2 = 20-5.05=14.95 c