

Heat Transfer Questions & Answers

Question by Student 201427135

Professor, I have a question A2 Q5-(c).

I should get shape factor for solving insulation thickness.

So I think it's steady state, the insulation is isothermal so I used isothermal cylinder shape factor. It's actually the first thing of shape factor table. But it didn't give me answer so I used hollow shape factor, then it did.

I don't know why shape factor is about hollow cylinder. I think inside of cylinder, it's full of steel cable so it's not hollow cylinder. Thank you

I don't understand. If it has steel cables in it, the cylinder must be hollow. It can not be full.

Question by Student 201428239

Professor, I have a question about radiation H-T. Should I always use unit of temperature K instead of Celcius degree??

Yes of course.

Question by Student 201312147

Professor, i have a one question. We said that most of the problems were not radiation. However, I think that radiation occurs in most situations. why we thought no radiation?? Is there an exact reason to assume that we don't have a radition?

Radiation heat transfer coming out of objects at 300 K is generally quite small compared to convection heat transfer. It becomes more important thus when the temperatures are higher because its intensity scales with the 4th power of the temperature. At low temperatures, you can ignore it. But at higher temperatures, you should take it into consideration unless there's not enough information to calculate it.

Question by Student 201312147

Professor, i solve the assignment#4, problem 7 (a) using iterative method. But I don't know if this is the right way to solve it. So, I want to know when to use the

iterative method.

Sure, you must use an iterative method for this problem.

Question by Student 201527105

I have a question about Assignment#3 Q5. When i use 'Shape Factor table', there is no case for Hollow sphere with r_1, r_2, r_3 . In this case, can i use the table about Hollow sphere with r_i, r_o ?

You should use shape factors here. Think about it more.

Question by Student 201428239

Professor, I have a question about Assignment 3 of Question #5 (c). I don't know the answer about (c). So I don't know if my answer is correct. I got 450K for (c). Is it correct??

There's a reason why this is not given. Think about the problem more.