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Courses » Spray Theory

Announcements

Course

Ask a Question

Progress

FAQ

Unit 5 - Week 4: Atomizers and their designs

Register for
Certification exam

Course outline

How to access
the portal

Week 1:
Introduction to
sprays and
atomization

Week 2: Drop
size and velocity
distributions

Week 3:
Atomizers and
their designs

Week 4:
Atomizers and
their designs

Simple
measurement
techniques

Selection of
atomizers

Spray
measurement
characteristics

Quiz :
Assignment 4

Week - 4
Feedback Form

Week 5:

Assignment 4

The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment. **Due on 2019-02-27, 23:59 IST.**

1) Which atomizer is used in ink-jet printers? **1 point**

- plane orifice nozzle
- spill return atomizer
- effervescent atomizer
- ultrasonic atomizer

No, the answer is incorrect.

Score: 0

Accepted Answers:

ultrasonic atomizer

2) Which patternator type measures the degree of azimuthal uniformity of the spray? **1 point**

- inline
- circular
- sector
- none of the above

No, the answer is incorrect.

Score: 0

Accepted Answers:

sector

3) Bubble laden flow is observed in which of the following injectors? **1 point**

- air blast atomizer
- spill return atomizer
- effervescent atomizer

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Week 8: Spray theory

Week 9: Practical aspects of atomizer fabrication and manufacturing

Week 10: Multiphase flow models of sprays

Week 11: Multiphase flow models of sprays

Week 12: Spray evaporation and combustion

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- pressure atomizer
- air blast atomizer
- effervescent atomizer
- ultrasonic atomizer

No, the answer is incorrect.**Score: 0****Accepted Answers:***ultrasonic atomizer*

5) A planar liquid water sheet flapping at a frequency of 500Hz exits from a rectangular orifice into atmosphere at a velocity of 5m/s. The thickness of the sheet is 1mm, density of water = 1000kg/m³, density of air = 1.23kg/m³, dynamic viscosity of water = 10⁻³ kg/m/s and surface tension of air-water = 0.072N/m. What is the Reynolds number? **1 point**

- 500
- 2500
- 5000
- 7500

No, the answer is incorrect.**Score: 0****Accepted Answers:***5000*

6) For the same flow condition, what is the Weber number? **1 point**

- 252
- 347
- 52
- 158

No, the answer is incorrect.**Score: 0****Accepted Answers:***347*

7) For the same flow condition, what is the Ohnesorge number? **1 point**

- 0.0073
- 0.0037
- 0.073
- 0.037

No, the answer is incorrect.**Score: 0****Accepted Answers:***0.0037*

8) For the same flow condition, what is the Strouhal number? **1 point**

- 0.1
- 0.01
- 0.5
- 0.05

No, the answer is incorrect.

Score: 0

Accepted Answers:

0.1

9) In order for increasing the flow rate of pressure swirl atomizer by four times, how much times should the supply pump be more powerful? **1 point**

- 4
- 16
- 24
- 64



No, the answer is incorrect.

Score: 0

Accepted Answers:

16

10) The oldest wax plate method was used to obtain the distribution of droplets. It was observed that the spread of the spray is roughly 50mm in diameter on the wax plate. What is the approximate spray angle (2θ) if the distance between the nozzle exit and wax plate is 25mm? **1 point**

- 30
- 45
- 60
- 90



No, the answer is incorrect.

Score: 0

Accepted Answers:

90

Previous Page

End