



INDUSTRIAL HEATING EQUIPMENT ASSOCIATION

Fundamentals of Industrial Process Heating – learn online with IHEA



The curriculum includes the basics of heat transfer, fuels and combustion, energy use, furnace design, refractories, automatic control, and atmospheres as applied to industrial process heating.

IHEA's Fundamentals of Industrial Process Heating Online Learning Course has been a successful source of high-level learning to those in the industrial heat processing industry for more than 10 years. Registration for the 2022 winter course is now open, and, for the past few years, the course has sold out, so early registration is encouraged. Scheduled to begin January 17, the six-week class will run through February 27. The flexible online format and interactive forums with other students, along with scheduled office hours with the instructor, are just a few of the benefits of this program.

The course is ideal for students to learn in a virtual format while at home or in the office. It is affordable and allows students to go at their own pace. The course offers indispensable tools to industrial

process heating operators and users of all types of industrial heating equipment. Throughout the in-depth online course, students learn safe, efficient operation of industrial heating equipment, how to reduce energy consumption, and ways to improve the bottom line. The course content provides an excellent overview of the essential areas used throughout the industry.

The curriculum includes the basics of heat transfer, fuels and combustion, energy use, furnace design, refractories, automatic control, and atmospheres as applied to industrial process heating. Weekly coursework, quizzes, and a final exam project are administered to guide students on their progress and evaluate their knowledge of the material. For a complete listing of the topics covered, visit www.IHEA.org.

ihea.org/event/OnlineWinter21.

This online course is a terrific value for IHEA members and non-members alike, considering no travel expenses are involved, and there is no time out of the office.

This course is designed to give the student a fundamental understanding of the mechanisms of heat transfer within an industrial furnace and the associated losses and the operation of a heating source either as fuel combustion or electricity. All concepts are derived mathematically with limited use of "rules of thumb." As one of the prime objectives, the student will learn how to properly size the heating system to accomplish the required furnace output. Radiant heat transfer, in particular, is a very complex phenomenon requiring rigorous mathematical analysis.

It is rarely addressed at the undergraduate level; therefore, the student should have a solid basis in undergraduate thermodynamics for this course.

A former online student said, "Because of balancing an extremely busy workload and family life, I am not able to be on a regular schedule or take time in the evening to travel to a class. The advantage for me is that I can check in when time permits and still stay current on all activities. The course information is directly related to my work, and I found it to be very beneficial."

Industry expert Jack Marino will lead students in this six-week online course. Marino, a registered professional engineer with more than 40 years' experience in the heat processing business, is a graduate of Rensselaer Polytechnic Institute with a bachelor's degree in aeronautical engineering and holds a master's degree in engineering science from Penn State. His knowledge and experience offer invaluable resources that online students can access throughout the course.

Registration for the Fundamentals course is open now through January 14, 2022, at www.ihea.org/event/OnlineWinter21. Cost for IHEA members is \$750 or one member voucher, and cost for non-members is \$925. Registration fee includes an electronic course handbook, course instruction, quizzes and projects, class forums, and the opportunity to contact the instructor throughout the course. Students who successfully complete the course will receive 18 PDHs. Printed materials are available for an additional fee.

IHEA'S NEW PUBLICATION AVAILABLE

The Industrial Heating Equipment Association's (IHEA) Induction Division recently published the *Induction Process Heating Handbook for Industrial Applications – First Edition*. The publication is now available

for purchase on the IHEA website. Induction Division members collaborated for several months to compile the content and provide a comprehensive handbook on induction heating.

The handbook is a quick introduction to basic operations and the many applications of induction heating in industrial processes. The basic principles of induction heating have been understood and applied to manufacturing since the 1920s. During World War II, the technology developed rapidly to meet urgent wartime requirements for a fast, reliable process to harden metal engine parts. Since that time, the applications for induction heating have extended to many manufacturing processes including pre- and post-heat treat-

ing, surface hardening, forging, sealing, bonding, annealing, and welding, among others.

"Following the lead of IHEA's long-standing Infrared Division (IRED), the Induction Division of IHEA has developed the *Induction Process Heating Handbook for Industrial Applications, First Edition*," said Induction committee chair Michael Stowe. "By no means a textbook, this handbook will provide basic information on how induction works and the equipment and operation for induction processes. Additionally, and perhaps the most valuable, is a wide range of induction heating applications and examples. For someone interested in induction heating as a possible technology for new or retrofit processes, this handbook is a great place to start."

Special thanks to the contributing companies for their hard work and diligent efforts that went into creating this new handbook: Advanced Energy; Alabama Power, a Southern Company; Ambrell; Dry Coolers, Inc.; and Electric Power Research Institute (EPRI).

The new *Induction Process Heating Handbook for Industrial Applications – First Edition* is now available in the IHEA bookstore, www.ihea.org/store. The cost is \$20 for members and \$40 for non-members.



Jack Marino

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IHEA 2022 CALENDAR OF EVENTS

JANUARY 17–FEBRUARY 27

Fundamentals of Industrial Process Heating online course

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Online registration is available until January 13

FEBRUARY 15–16

Powder Coating & Curing Processes Seminar

The day and a half Introduction to Powder Coating & Curing Processes Seminar will include classroom instruction and hands-on lab demonstrations.

Alabama Power Technology Applications Center | Calera, Alabama

Registration Fee: IHEA members: \$325 / Non-members: \$425

MARCH 14–17

Electrification 2022 International Conference & Exposition

This event will share what's new in the electrification of buildings, vehicles and industry. Spend time with your colleagues and explore efficient, equitable solutions for a net-zero economy.

Charlotte Convention Center | Charlotte, North Carolina

For details on IHEA events, go to www.ihea.org/events

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