

**“Combustion System Design and Application to Industrial Furnaces”
Covington, Kentucky – March 2022**

Day 1 – March 16 Moderator: Don Whipple			
	<i>TOPICS</i>	<i>SPEAKER</i>	
7:30 a.m. – 8:00 a.m.	Registration		
8:00 a.m. – 9:00 a.m.	Fundamentals of Combustion	Don Whipple	
9:00 a.m. – 10:00 a.m.	Industrial Burners – Pre Mix	Don Whipple	
	Industrial Burners – Nozzle Mix	Keith Nieszczur	
10:00 a.m. – 10:15 a.m.	BREAK		
10:15 a.m. – 10:30 a.m.	Burner Tile Installation	Don Whipple	
10:30 a.m. – 10:45 a.m.	Burner Turndown	Don Whipple	
10:45 a.m. – 12:00 p.m.	Control – Ratio-Process	Don Whipple	
12:00 p.m. – 1:00 p.m.	LUNCH		
1:00 p.m. – 2:15 p.m.	Combustion Systems Environmental Emissions	Clive Lucas	
2:15 p.m. – 2:45 p.m.	Furnace Pressure Control	Jim Checkeye	
2:45 p.m. – 3:00 p.m.	BREAK		
3:00 p.m. – 4:00 p.m.	Heat Transfer Mechanisms	Don Whipple	
4:00 p.m. – 5:00 p.m.	Heat Recovery Systems	Keith Nieszczur	

Day 2 – March 17

	TOPICS	SPEAKER	
8:00 a.m. – 9:00 a.m.	Combustion Safety NFPA 85/86	Keith Nieszczur	
9:00 a.m. – 10:15 a.m.	Typical Start Up	Don Whipple	
10:15 a.m. – 10:30 a.m.	BREAK		

Time	Aluminum Topics	Speaker	Steel Topics	Speaker	
10:30 a.m. – 11:00 a.m.	Intro to Non-Ferrous Metal		Port Blocks – Inspection/Maintenance	David Church	
11:00 a.m. – 11:45 a.m.	Melting with Oxygen	Don Whipple	Burner Selection and Indirect Firing		
	Rotary Barrel Furnaces				
11:45 a.m. – 12:45 p.m.	LUNCH				
12:45 p.m. – 1:30 p.m.	Direct Charged Melters	Don Whipple	12:45 p.m. – 1:30 p.m.	Reheat Furnace Practice	David Church Stephen Simko
1:30 p.m. – 2:00 p.m.	Dry Hearth Furnaces	Don Whipple	1:30 p.m. – 2:00 p.m.	Energy Management	
2:00 p.m. – 3:00 p.m.	Contaminated Scrap Processing (Gillespie & Powers)	Ian Marsh	2:00 p.m. – 3:00 p.m.	Heat Treat	
3:00 p.m. – 3:15 p.m.	BREAK				
3:15 p.m. – 4:15 p.m.	Metal Circulation (ALTEK)	James Herbert	3:15 p.m. – 4:00 p.m.	Heat Transfer	David Church Stephen Simko
4:15 p.m. – 5:00 p.m.	Well Charged Melters	Clive Lucas	4:00 p.m. – 4:30 p.m.	Mill Scale	
			4:30 p.m. – 5:00 p.m.	Forging	

Day 3 – March 18

	<i>TOPICS</i>	<i>SPEAKER</i>	
8:00 a.m. – 10:00 a.m.	Component Selection and System Sizing	Don Whipple	
10:00 a.m. – 10:15 a.m.	BREAK		
10:15 a.m. – 11:00 a.m.	Component Selection and System Sizing (continued)	Don Whipple	
11:00 a.m. – 11:15 a.m.	Piping and Installation	Clive Lucas	
11:15 a.m. – 12:00 p.m.	Troubleshooting	Keith Nieszczur	

Sections Not Scheduled (included on flash drive):

- X1) Aluminum: Heat Treat
- X2) Boilers, Fluid Heaters and Rotary Dryers
- X3) Combustion Systems with Oxygen
- X4) Holding Furnaces
- X5) Oxidation