



Introduction to the Gas Turbine Combustion Short Course

Dr Vishal Sethi

**Centre for Propulsion and Thermal Power Engineering
School of Aerospace, Transport and Manufacturing
Cranfield University**

www.cranfield.ac.uk



Gas Turbine Combustion Short Course: Module Contributors

Dr. Vishal (Bobby) Sethi

Associate Prof. - Gas Turbine Combustion and Environmental Impact
Head – Low Emissions Technologies and Combustion Group
Centre for Propulsion and Thermal Power Engineering
School of Aerospace, Transport and Manufacturing,
Cranfield University, UK

Professor Pierre Gauthier

RAEng Visiting Professor in Low Emissions Combustion Modelling
Centre for Propulsion and Thermal Power Engineering,
School of Aerospace, Transport and Manufacturing,
Cranfield University
and
Senior Combustion Key Expert and
Global Technical Focal Point for Combustion CFD
Siemens Energy (Canada)

Dr. Marco Zedda

Research and Technology Manager – Aerothermal Methods and Tools
Rolls- Royce
Derby, UK

Dr. Devaiah Nalianda

Senior Lecturer - Environmental Performance of Integrated Propulsion Systems
Centre for Propulsion and Thermal Power Engineering
School of Aerospace, Transport and Manufacturing,
Cranfield University, UK

Dr. Dave Abbott

Visiting Fellow – Gas Turbine Combustion Thermoacoustics
Centre for Propulsion and Thermal Power Engineering
School of Aerospace, Transport and Manufacturing,
Cranfield University, UK



Gas Turbine Combustion Short Course Module: Timetable

Time	Day 1 - 21/09	
	Title	Contributor
0900 – 0950	Intro + Design considerations and sizing methodologies 1	VS
1000 – 1050	Design considerations and sizing methodologies 2	VS
1110 – 1200	Aero-derivative and large stationary gas turbine combustors 1	PG
1210 – 1300	Aero-derivative and large stationary gas turbine combustors 2	PG
	Lunch	
1400 – 1450	Design considerations and sizing methodologies 3	VS
1500 – 1550	Combustion efficiency	VS
1610 – 1700	Overview of Gas turbine generated pollutants	VS



Gas Turbine Combustion Short Course Module: Timetable

Time	Day 2 - 22/09	
	Title	Contributor
0900 – 0950	Low emissions combustor design concepts (aero)	VS
1000 – 1050	Low emissions combustor design concepts (stationary)	PG
1110 – 1200	Gas turbine combustor thermoacoustics 1	DA
1210 – 1300	Gas turbine combustor thermoacoustics 2	DA
Lunch		
1400 – 1450	Role of CFD in combustor design and development 1	PG
1500 – 1550	Combustor heat transfer and cooling 1	VS
1610 – 1700	Combustor heat transfer and cooling 2	VS



Gas Turbine Combustion Short Course Module: Timetable

Time	Day 3 - 23/09	
	Title	Contributor
0900 – 0950	Combustion challenges - changing fuel gas compositions	DA
1000 – 1050	Gas turbine combustor thermoacoustics 3	MZ
1110 – 1200	CFD for aero-engine combustion applications 1	MZ
1210 – 1300	CFD for aero-engine combustion applications 2	MZ
Lunch		
1400 – 1450	Role of CFD in combustor design and development 2	PG
1500 – 1550	Contrails 1	DN
1610 – 1700	Contrails 2	DN



Gas Turbine Combustion Short Course Module:

Timetable – Hydrogen and Decarbonisation Scenarios Workshop

Time	Day 4 – 24/09	
	Title	Contributor
0830 – 0845	Introductions and welcome	PP
0845 – 0945	Hydrogen airliners	PP
0945 – 1100	Hydrogen and low NOx	VS
	Break	
1115 – 1230	Contrails and abatement	DN
	Lunch	
1330 – 1430	Hydrogen R&D	VS
1430 – 1545	Aircraft electrification	NM
1545 – 1630	Decarbonising a country	PP
	Discussion	
	Close	