



## Combustion, a three-day advanced course

- Day 1:     Lecture 1 – Introduction  
            Lecture 2 – Thermodynamics/Kinetics and turbulence  
            Lecture 3 – Gas burnout  
            Lecture 4 – Particle burnout
- Day 2:     Lecture 5 – Flames and their properties  
            Lecture 6 – Fixed and fluidized beds  
            Lecture 7 – The fireplace
- Day 3:     Lecture 8 – Combustion in practice  
            Lecture 9 – Stuff leaving the combustion chamber  
            Lecture 10 – Diagnostics based on control system data

*Literature:* Norbert Roberts, *Turbulent combustion*, Cambridge University 2004, 321 pages.

The book is available free of charge as an e-book from the [epdf.pub](https://epdf.pub) and is easiest found through a search for its ISBN 0-511-01927-0 or at

<https://epdf.pub/queue/turbulent-combustiond4f9dfc1016bc6c2ce897e9edf4ce35931961.html>

### Day 1

The first day is to introduce some basic concepts of combustion, concepts and processes that are common to all types of combustion processes regardless of fuel and technology.

### Day 2

Day 2 is to introduce the combustion process as such. Combustion can occur in different settings; it can be homogeneous or heterogeneous and it can be transport controlled or it can be kinetically controlled. Using some of the fundamental concepts from day 1 this session aims at describing some of the practical aspects of combustion. This leads to demands set by the combustion process and how they affect the combustion chamber design.

### Day 3

Day 3 is to conclude the course and to “tie up the sack”. The perspective now shifts from inside the combustion chamber to outside including control systems and emissions.