

Faculty of Engineering
and Physical Sciences



UNIVERSITY OF LEEDS

Energy from **Biomass** **Combustion**

Monday 17 – Wednesday 19 May 2021

Supergen



Energy from Biomass Combustion

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Course Director

Professor Jenny Jones, Professor of Sustainable Energy, Director, Centre for Doctoral Training in Bioenergy

About the course

Background to the course

Biomass is a key element in government plans to increase renewable energy sources and reduce greenhouse gases. Bioenergy has environmental and economic impacts, and is unique as a renewable fuel since it can contribute to all three energy sectors – electricity, heat and transport fuels.

In the UK, imported white wood pellets are a major fuel, but energy crops, such as short rotation willow coppice and miscanthus as well as forestry residues, agricultural residue and waste woods, all find use in the production of electricity and heat.

What will I learn?

This course will provide you with a comprehensive overview of the status and developments in energy delivery from biomass combustion. The focus will mainly be on biomass for electricity and heat. This course looks at fuel supply options and the emissions and plant performance implications. The use of biomass for energy production has several associated technical, environmental and socioeconomic challenges. Some of these, particularly the technical challenges, will be addressed in this course.

How will I benefit?

The course will give you a sound understanding of the fundamentals and practicalities of:

- the basics of solid biomass combustion
- dedicated biomass installations
- solid biomass for electricity generation
- biogas and landfill gas for process heat and power generation
- sustainability of biomass supply chains

Who should attend

This course will be of particular interest to you if you're:

- a process engineer or chemist new to the bioenergy field
- a regional developer wanting to obtain a technical perspective on bioenergy
- an energy and environmental manager interested in using bioenergy
- a process heat system designer interested in biomass as a heat source.

Course Accreditation

This course has been developed in conjunction with SUPERGEN Bioenergy Hub



What our previous delegates say:

“A well-organised, informative course that provides you with a solid understanding of energy from biomass combustion”
Environment Agency

“Well informed, great speakers, giving an insight into the latest advances made in different fields”
Ofgem

“Excellent in-depth journey through the key elements of biomass”
Natural Resources Wales

Programme

Monday 17 May 2021

08.30 Registration and coffee

09.00 Prospects and developments in bioenergy
Bilal Hussain,
Senior Analyst – Modelling,
Energy Systems Catapult (ESC)

09.45 Life cycle analysis and sustainability
Dr Rob Holland,
Senior Research Fellow,
University of Southampton and
Systems Topic Representative
for the SuperGEN Bioenergy hub

10.45 Coffee

11.05 Sustainable biomass – understanding and meeting the UK, EU and global requirements on sustainability
Peter Coleman,
Department for Business,
Energy and Industrial Strategy

12.00 Supply chain economics and risk management
Rachel Lee,
350 Strategy Limited

13.00 Lunch

13.45 Fundamentals of biomass combustion
Professor Jenny Jones,
SUPERGEN and
School of Chemical and
Process Engineering,
University of Leeds

14.45 Traded biomass and standards
Susan Weatherstone,
Fuel Technology,
Uniper Technology Centre

15.35 Tea

15.55 Emissions standards and regulations for biomass heat and power
Steve Griffiths,
Uniper Technologies Ltd

17.00 End of day one

Tuesday 18 May 2021

08.45 Registration

09.00 Domestic biomass and air quality
Dr Gary Fuller,
Environmental Research Group,
Imperial College London

10.00 Case study: combustion optimisation on an FBC firing waste wood
Alf Malmgren,
RJM International

11.00 Coffee

11.20 Extending fuel specifications and plant limits to increase flexibility
Dr Trudy Beeley,
RWE

12.05 Biomass boilers – technology and deployment
Neil Harrison,
re:heat

13.05 Lunch

13.50 Case study: UK Biomass Installation – overcoming the challenges
Stephen Chilton,
PX Limited

14.50 Tea

15.10 Boiler design considerations when converting to biomass firing
Dr David Waldron,
previously GE Power

16.00 Coal-to-biomass combustion plant conversion
Dr Patrick Mason,
Ayup Ltd and Visiting
Research Fellow,
University of Leeds

16.45 End of day two

Wednesday 19 May 2021

08.45 Registration

09.00 The problem of metals in biofuels – combustion and ash influences
Professor Jenny Jones,
SUPERGEN and
School of Chemical and
Process Engineering,
University of Leeds

10.00 Corrosion, slagging and fouling – special issues relating to biomass firing
Professor Bernard Gibbs,
School of Chemical and
Process Engineering,
University of Leeds

11.00 Coffee

11.20 Biogas and landfill gas resources, current utilisation and future potentials
Stewart Davies,
Viridor Waste Management

12.20 Lunch

13.05 Biomethane – gas to grid
Declan Owens,
Cadent Gas Ltd

14.00 The highs and lows of renewable energy
Fred Walter,
Fred Walter & Sons Ltd

15.00 End of day three and course

View the full programme and book your place online at
<http://eps.leeds.ac.uk/short-courses>

Please note, although we remain devoted to the programme specified, we reserve the right to vary the programme in detail if required to do so by factors beyond our control.

Further information

Course Fees

The following course fees include the cost of tuition, paperless course materials, lunches and light refreshments:

Full three days **£925** or any one day **£360**

Venue

The course venue will be Weetwood Hall Estate which offers first-class hotel facilities, a business centre and ample parking facilities. Weetwood Hall Estate is ideally situated 15 minutes north of the centre of Leeds.

Further details can be found at www.weetwood.co.uk

Accommodation

If you require accommodation, and wish to stay at the course venue Weetwood Hall Estate, please contact Emma Barker E: reservations@weetwood.co.uk / T: 0113 230 6000 quoting 'CPD' and the 'Energy from Biomass' course.

The below rates are for a superior double room and include VAT: Sunday evening, bed and breakfast £84 Monday/Tuesday evening, bed and breakfast £88

Please book your accommodation at least two weeks before the course commences to guarantee rates and availability. A list of alternative hotels is available on request.



How to Book

Please book your place for this course through our secure Online Store, using debit or credit card, following the instructions below:

1. Visit our Online Store at: <http://store.leeds.ac.uk>
2. Select Conferences and Events in the left-hand navigation bar and 'CPD Faculty of Engineering and Physical Sciences'
3. Select the relevant course, click on 'Book Event' and complete your booking details


You will receive an automatic confirmation email within 24 hours of your booking.


Get in touch


Harriet Wills
CPD, Conference and Events Unit
Faculty of Engineering and Physical Sciences
University of Leeds

E: cpd@engineering.leeds.ac.uk

W: <https://eps.leeds.ac.uk/short-courses>

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 CPD, Conference and Events Unit,
University of Leeds

Please note

The CPD team are currently working remotely and therefore not contactable by phone, if you have a query please send us an email.

Terms and conditions for booking

Payment by debit/credit card

Payment should be made at the time of booking via the Online Store.

Payment via purchase order and invoice

A purchase order document should accompany your booking form. Our standard terms of payment are 30 days from date of invoice, however payment must be made prior to attendance. Attendance may be refused if payment has not been received.

Where a delegate cancels a registration

For cancellations made within seven days of booking: a full refund is payable unless the course starts within the next seven days, in which case the full fee is payable and no refunds will be made.

For cancellations made after seven days of booking: written cancellations received up to 15 working days before the course will be subject to an administrative charge of 20% of the total fee. Within 15 working days of the course the full fee is payable and no refunds will be made.

For non-attendance: the full fee is payable and no refunds will be made but copies of the course materials will be sent to the registered delegate. Substitutions may be made at any time.

Changes made by the University of Leeds

The course programme may have to be re-scheduled or the speakers changed for reasons outside our control. The University of Leeds reserves the right to cancel or postpone a course, in which case fees will be refunded in full. In the event of cancellation, the University will not be held liable for delegates' travel or accommodation expenses.

Data/Privacy

Your right to privacy is important to us. We will only use your information to provide information on our CPD courses and relevant events. We will not pass your details on to any other organisations. The ways in which your personal data may be used when you provide it to us are defined in our Privacy Notice at <https://eps.leeds.ac.uk/privacy>.

If you have opted in to receive details of future CPD courses from us you can unsubscribe at any time by emailing us at cpd@engineering.leeds.ac.uk and your details will be removed from our database.



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