THE CABON RECYCLING NETWORK NEWSLETTER & UPDATES

Who Are We?

The Carbon Recycling Network (CCnet) is one of 6 BBSRC NIBB Phase II networks. The network will promote those aspects of carbon recycling that support the re-use and exploitation of single carbon (C1) greenhouse gases, CO, CO_2 and CH_4. The focus is on gas fermentation, primarily using chemoautotrophs, and seeks to explore the potential of anaerobic digestion (AD) as a gas fermentation feedstock generator.

The Carbon Recycling Network provides a cross-sector forum with the goals to foster and enhance collaboration between industry and academia; develop skills and expertise; share best practice; define common research priorities; and target funding opportunities in this area. The management board is currently 14 strong, with Professor Nigel Minton (University of Nottingham) as PI and has 6 CoIs.

Progress

Our membership continues to grow and currently stands at 461 with 84 from industry, 69 Europe, 31 International including: USA, India, Brazil & Korea. We have 628 followers on Twitter. Over the past year we have completed; 2 Workshops, 1 Conference, 2 Industry exhibitions and 5 outreach activities.

Recent Funding Awards

POC Awards 2019

****

The 2019 POC call:

'***Industrial Decarbonisation: Challenges & Opportunities***'

Closed on 30 October 2019

Our congratulations and ~ £50K each go to:

Kati Kovacs – University of Nottingham

Yue Zhang – University of Southampton

John Heap – University of Nottingham

Nigel Minton – University of Nottingham

Frank Sargent - Newcastle University

BIV Awards 2020

****

Congratulations and a £10K BIV voucher go to:

Prof Charles Banks - University of Southampton

and Michael Chesshire - Lutra Ltd

Dr Samantha Bryan - University of Nottingham,

Aurelius and Cyanetics

Network Rebranded!!

Its over a year since the network was launched back in 1st April 2019 and we have decided to give our network a branding refresh!!

CCnet has now been re-branded to '**The Carbon Recycling Network**', to give the network a clearer identity especially to new potential members and stakeholders.

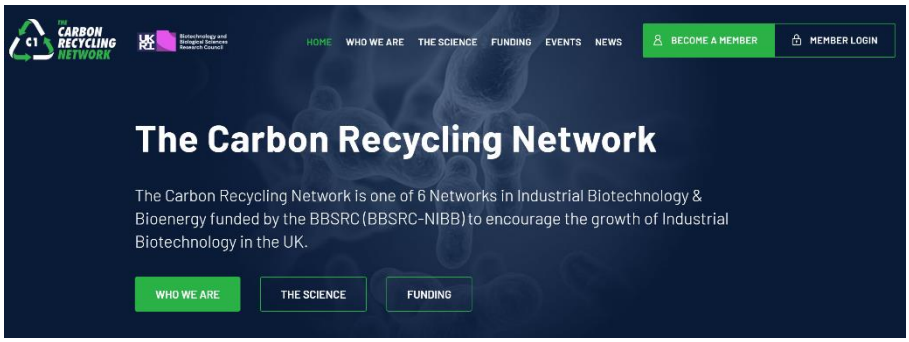
'.

OUR NEW LOGO:

NEW WEBSITE DOMAIN:

The new domain has been changed to:

https://carbonrecycling.net



TWITTER HANDLE:

Our Twitter account is now: @CRecycle_Net

Help us promote our new branding by tweeting us!

****

The Carbon Recycling Network featured in New Scientist Magazine!!

The Carbon Recycling Network were invited to write an article for the prestigious New Scientist Magazine, which receives nearly 1 Million worldwide weekly readers. Our article, is found on page 44 of the 20 June 2020 edition. The article explores gas fermentation, how to join the network and highlights our some of our industrial collaborations, including LanzaTech and Deep Branch Biotechnology.

Read the PDF Here

NewScientist

****

Upcoming Funding Calls

Industrial Biotechnology (IB) Funding round-up:

KTN's IB team have compiled a list of the latest funding calls of relevance to Industrial Biotechnology:

https://ktn-uk.co.uk/news/industrial-biotechnology-funding-round-up

https://ktn-uk.co.uk/news/chemicals-funding-round-up

The UKRI-BBSRC Collaborative Training Partnerships (CTP2) Funding Calls:

The UKRI-BBSRC Collaborative Training Partnerships (CTP) scheme is a doctoral training programme directed at industrial research challenges and delivered by consortia led by businesses in collaboration with Research Organisations.

Application deadline: 9 July 2020, 16:00

More Information

Innovate UK: The Young Innovators programme

Innovate UK will award up to 100 young people with a £5000 grant, business coaching and an allowance to cover living costs. The Young innovators programme is a partnership between Innovate UK and the Prince's Trust.

More information

FUNDING FROM OTHER NIBBs

HVB:

PoC Call: 14 September 2020

Training Fund: always open

E3B:

Open funding call for Covid-19 projects (PoC or BIV): open call
Early Career Researcher Fellowship Planning Visit Fund: open call
Collaboration-Building Workshop Fund: open call

BBSRC:
Collaborative Training Partnerships: 9 July 2020

FREE LIMITED TIME OFFER
NNFCC Bioeconomy Information Package
It's now easy to keep up with bioeconomy developments. Simply email YES to r.horton@nnfcc.co.uk to take advantage of their free information package (RRP £89+VAT) for the duration of lockdown. More information and an example of the information can be found here.

Events

The Carbon Recycling Network Conference 1
10 – 12 February 2020

With much of the northern hemisphere-battling storm Ciara, Nottingham was the hot spot for the convergence of scientific minds to further technologies into to help develop the area of Carbon Recycling. February 10th 2020 marked the start of a 2-day conference on "Carbon Recycling". Hosted by University of Nottingham's based BBSRC-NIBB "CCnet" and organised by network manager Louise Dynes. Along with the battling storm, the event also encountered last minute changes as a result of the original venue undergoing last minute refurbishment, the event was relocated to the Park Plaza Hotel, Nottingham, UK.

Formally starting with a Welcome dinner at the Hotel, there followed 2 days packed with talks, pitches and posters. With the aim of bringing together academic and industrial scientists, the conference attracted over 110 attendees, 29 of whom came from industry. Delegates were mainly from the UK, with 27 from Europe, 3 from the USA and one from South Korea. A total of 21 talks were presented, 4 of which were invited, the rest were selected from abstracts. The Carbon Recycling Network Director Professor Nigel Minton opened proceedings as chairman and there followed high calibre keynote presentations from: Sean Simpson (LanzaTech, USA), Arren Bar-Even (Max Planck Institute, Germany), Irini Angelidaki (Technical University of Denmark) and Klaas Hellingwerf (Photanol, Netherlands).

Amid this star cast, 5 PhD students also gained valuable oral presenting experience with Ari Satanowski (Max Planck Institute, Germany) and Fabian Schwarz (Wolfgang Goethe University Frankfurt,

Germany) carrying away a certificate of excellence and a network goodie bag. A total of 36 posters were presented with 17 from PhD students. Carrying away prizes for the best posters were Amaury Montarnal (University of Nottingham, UK), Helge M. Dietrich (Wolfgang Goethe University Frankfurt, Germany) and Tatiana Spatola Rossi (Oxford Brookes University, UK). *See picture bottom left.*

Delegates gave decent feedback for the conference:
94% of responders said it was well organised and that the programme was extremely/very engaging and met new contacts. They appreciated the high quality and variety in the programme. They also praised the opportunities for good discussion and networking. Many new relationships were forged which we are hopeful will initiate new collaborations.

Comments Included:

"Brilliant conference, really enjoyed our time in Nottingham".

"Excellent speakers"

"Great line up and good spectral of topic areas relevant to CCnet interests"

"Considering the last minute changes to venue the conference was executed smoothly"

PhD Student winners

Discussions during Poster Presentations

The Carbon Recycling Network - Group Photograph

Newton Bhabha UK-India Industrial Waste Challenge Mid-Term Review Meeting 2nd-3rd March 2020, IIT Mumbai

By Dr. Gareth Little, Carbon Recycling Network Member

The UK-India Industrial Waste Challenge is a partnership between UK Research and Innovation (UKRI) and Department of Biotechnology, Government of India (DBT). This is a joint UK-India investment of £10 million, funding projects aiming to reduce industrial waste and pollution in India from the sugar cane, paper and pulp and municipal solid waste sectors. There are 526 sugar mills operating in India, which crush more than 200 million tons of sugarcane annually. The vWa consortium is developing a bio-refinery platform for valorising waste from sugar cane and associated industries in India. These industries produce large amounts of waste biomass: 80 million tons (MT) of bagasse, 10 MT of press mud, 25 MT of cane waste and 45 billion litres of distillery spent wash and bagasse pith.

On arrival in sunny Mumbai, we took a 4-hour tourist trip by taxi to see the bustling city, with its extreme traffic and crowded streets. The mid-term meeting began later that evening with an outdoor meal and drinks reception, enabling the academic and industrial partners to meet. The following two days consisted of each project reporting on progress, along with discussion. This was enlightening due to several groups working on projects utilising lignocellulosic hydrolysate as a source of sugars for fermentation. Different methods for pre-treatment including microwaves, cavitation and ultrafiltration are being explored, and a variety of products targeted including food additives, bulk chemicals and biogas.

Following the mid-term meeting, four of us from the vWa project went on to visit the Vasantdada Sugar Institute (VSI) at Pune, and had a tour of the Baramati Agro Ltd sugar mill at Shetphalgadhe. The sugar cane industry in India supports nearly 60 million farmers and their families. The VSI is a research and consultancy cooperative, with 146 sugar mills and 74 distilleries as members. Each farmer cultivates a small 2-5 acre crop of sugarcane, and the sugar mill harvests the cane and takes it to the mill for processing.

The cane is shredded and crushed with a fibrizer and rollers to extract the juice, resulting in a mountain of bagasse waste. The juice is purified and crystallised by boiling, plus the addition of lime and sulphites, which creates a press-mud waste. The sugar mill generates 22MW of electricity from burning some of these wastes in a large boiler, of which approximately 7MW is used to power the mill. The molasses left after boiling the sugarcane juice are fermented and distilled to produce ethanol, with 50% purity ethanol sold to local pharmaceutical companies. The ethanol is further concentrated using molecular sieves to >98% for sale to fuel companies for blend-in to transport fuel. After departing the sugar mill, we joined these tankers, along with many other from the various chemical and pharmaceutical industries in the region, jostling for position on the road back to Mumbai.

I would like to thank the organisers and hosts from the UK and India of the meeting at IIT Bombay; Dr. Sanjay Patil and all the others from the VSI for their hospitality while in Pune; Prof. Nigel Minton and Dr. Ying Zhang for supervision; the BBSRC for funding.

Photograph by Dr Gareth Little

Upcoming Events

KTN – Chemistry and Industrial Biotechnology Open Online Forum

1/07/2020 - 1/07/2020 at 10am

The Chemistry and Industrial Biotechnology team invite you to join them at their first open forum which will take place on Wednesday 1st July at 10 am. In a time of change and uncertainty, this offers an opportunity to share knowledge, connect to the KTN team and each other. This will be a recurring meeting taking place every 6 months which aims to inform attendees of key activities across the team, highlight relevant funding and obtain feedback from the wider chemical and industrial biotechnology communities. Register Here

EUBCE 2020 European Biomass Conference and Exhibition

6 – 9 July 2020, Virtual

The 28th EUBCE will expand its portfolio from energy related biomass production and conversion of bio-based feedstock to other sectors of the economy and will now integrate the bioeconomy into its conference programme. More Information

Outreach Activities

Science in the Park, 2020

March 6th-15th 2020 was British Science Week – a celebration of science, technology, engineering and maths across the UK, organised by the National British Science Association. In long standing tradition, the local branch of the BSA welcomed visitors to “Science in the Park” at Wollaton Park, on Saturday 7th March. This annual event was free to enter and allowed the whole family to enjoy interactive activities and live demonstrations from all branches of Science.

In past year’s about 7000 have attended the event, though numbers were down, due to the beginning of the Corona virus crisis, it is estimated that 300 parents and children visited the CCnet stand to learn that not all bacteria are bad, and some can even be used to make useful products.

Team leader Ruth Cornock reports *“Despite a small reduction in numbers, the event was still quite busy, and we had a continuous stream of visitors of all ages to the stand, keen to learn more about what we do within our area of the university. Lots of children made their own microbes using plastcine and took them home in their very own petri dishes. While this was going on we took the time to speak to parents and carers and other visitors about the importance of the gas fermentation work we do, and how it may help to reduce reliance on fossil fuels, and fits into a circular economy. All conversations with visitors to the stand were very positive, and hopefully alleviate a few fears and concerns regarding the current events (COVID-19)*!”

Feedback received: – 100% said they had a positive experience, 100% said they had no worries about the research, and 80% said they learned something new. Comments included “I want to learn more about bacteria” “I have learned that somethings are made by bacteria”

Special thanks go to The Carbon Recycling Network team leaders: Ruth Cornock and Claudio Tomin Andrino and their band of enthusiastic helpers:- Louise McCluskey, Swapnika Challa, Benjamin Myers, Ruth Griffin, Margaux Poulalier Delavelle, Liam Wood, Cynthia Akaluka and Francois Seys.

Network members volunteering at 'Science in the Park'

Other News

Creating spinouts from biotechnology

BBSRC's mission is to lead world-class 21st century bioscience and support the bioeconomy. To fulfil this mission BBSRC invests in research excellence, pushing the frontier of knowledge in biology to contribute to the realisation of a healthy, prosperous and a sustainable future. BBSRC have produced a report highlighting a few examples of spinout companies that exemplify how BBSRC investments in research and supports for translation are making a difference.

Read More

Industrial Biotechnology - Mapping the UK Innovation Landscape

Recently launched, the Industrial Biotechnology Landscape Map covers the UK IB supply chain from raw material producers, technology providers and end users as well as highlighting key academic institutions, innovation centres and scale up facilities. If you would like to be added to the map/have a map query please contact Dr Catherine Julia Mort (Knowledge Transfer Manager, IB) at catherine.mort@ktn-uk.org

Contact

If you would like to share a story in the next newsletter please contact:

Louise Dynes Network Manager
louise.dynes@nottingham.ac.uk
+44(0)115 7484095
Biodiscovery Institute
University of Nottingham, Nottingham, NG7 2RD

THE CARBON RECYCLING NETWORK

UKRI Biotechnology and Biological Sciences Research Council