

Summer 2021 Newsletter

Cumbria Members Group

IChemE ADVANCING
CHEMICAL
ENGINEERING
WORLDWIDE

Welcome to the summer 2021 edition of the Cumbria Members Group newsletter. Our aim is to support the professional development of Chemical Engineers in our area, for all ages and levels of experience. In this issue, we review our recent webinars and provide local IChemE updates.

Devils Porridge Virtual Tour

In June, Judith from the Devils Porridge Museum kindly offered to give us a virtual tour of what used to be HM Factory Gretna. The purpose-built factory was designed to help solve the 1915 Shell Crisis faced by the British Army in WW1.

The factory produced cordite (A.K.A the Devils Porridge) that was used as a propellant for shells and bullets. It was produced by blending nitro-glycerine and nitro-cotton into a paste, which was then mixed by women with wooden paddles (or sometimes their bare hands!). The paste was then gelatinised with mineral jelly, with alcohol and ether used as solvents. The “dough” was then extruded into cords through dies by hydraulic pressure and then dried in stoves.

The factory was staffed by women known as the “Gretna Girls” who were recruited from across the UK. The factory closed after the war ended in 1918, however the process designer, Chemical Engineer Kenneth Bingham Quinan’s legacy led to increased recognition of the work of Chemical Engineers. IChemE was then founded 4 years later in 1922!



The “Gretna Girls” handling cordite

Advanced Fuel Cycle Webinar

In April, we hosted a virtual evening with various talks from National Nuclear Laboratory (NNL) chemical engineers across the Advanced Fuel Cycle Programme. With the government’s aim of achieving ‘net zero’ by 2050, funding is provided for nuclear innovation and research. Robin Taylor explained that the Advanced Fuel Cycle Programme has 12 individual programmes developing advanced nuclear fuels and advanced recycling and sustainability, focusing on sustainability of the nuclear fuel cycle. Details about the “flexible mini fuel line” and “Sim Plant” were presented in addition to the two covered below.

Donna McKendrick introduced a new aqueous reprocessing technique, as an alternative to the solvent extraction processes currently used. Although still an immature technology, Pyroprocessing uses molten salts with electrochemical processes and high temperatures to achieve separation. The difficulties with processing the salt waste produced were explained with potential solutions, as the waste needs to be minimised to achieve a sustainable closed fuel cycle.

The ‘Plutonium and Minor Actinide Laboratory 2’ concept was presented by Harry Rigby as a new technology for dissolution, chemical separation through solvent extraction and plutonium finishing. Novel technologies intensified processes within the glovebox environment, through the use of compact centrifugal contactors in series for higher efficiency, increased flexibility and better process control.

STEM Update

While schools are now back, STEM events are still proving difficult to organise and a number have been cancelled on short notice due to groups of pupils needing to self-isolate after getting positive tests. That said, there is still plenty that can be done to help the next generation of chemical engineers. The Arkwright Engineering Scholarship programme are very keen to get some new chemical engineering mentors for the 2021 school year – this is a well-supported 12 month programme that involves providing guidance to a 16-18 year old aspiring engineer through their final year of school. All levels of experience welcome! See: www.arkwright.org.uk

If you would like further information and contacts for this scheme, or are a STEM ambassador and would be willing to help out with any future careers events, please contact Harry Brook: harry.brook@sellafieldsites.com

Cumbria MG Updates

Due to the COVID pandemic, IChemE has recently announced that Member Groups cannot organise face to face events for the remainder of 2021, meaning that all of our events will be held online.

The committee has a couple of events planned for the remainder of the calendar year; however we are also open to ideas from members. Email: membergroups@icheme.org with “Cumbria Members Group” in the subject field, or send our Facebook page a message for any suggestions for virtual events!

We are also aware of some issues with our emails not reaching members. If you've been experiencing any problems, please email IChemE using the address in the previous paragraph and they can investigate this for you.

Initial Professional Development

IChemE has recently issued guidance on the changes to the chartered member status application process. The changes are part of Project SMART (Sustainable Membership Achieved via Robust Transactions), which aims to deliver sustainable membership growth, by removing barriers (indirect and unintentional) to professional qualification whilst maintaining and building upon IChemE's high professional standards. In practice this means some changes to the way in which applicants progress through the membership assessment process.

There will now be a requirement to demonstrate that an applicant has sufficient professional experience before moving forward to submitting their C&C report. This is done through the recording of Initial Professional Development and Professional Review. The Professional Review is undertaken by assessors and will ensure that candidates going forward have sufficient relevant experience to compile a Competence and Commitment Report.

For trainees on an Accredited Company Training Scheme, the Initial Professional Development is confirmed by a nominee of the scheme manager – there is no requirement to produce any extra reporting, they just work within the requirements of their training scheme. The process is currently being piloted and applications for chartered member status are currently paused. For trainees who do not meet the IChemE's educational requirements, for example course not accredited or not at MEng standard, then the Individual Case Procedure is used to enable the candidate to demonstrate their technical competence. I appreciate that this might feel significant for some people; there is guidance available on the IChemE website or if people need some specific help, please contact Chris Bone: chris.j.bone@sellafieldsites.com.

Your Committee

Toby Cushion – Chair

Jenny Sykes – Secretary/Events

Phil Murphy – Treasurer

Dan Pocock – Communications

Harry Brook – STEM

Lee Marquis/John Smallman –

Mentor coordination

Upcoming Events

Cumbria Industry Insight

27th October

Annual Meeting – COP 26 &

Engineering Net Zero

24th November