MCAA - Danish Chapter
November 2018 Newsletter

We´re happy to bring to you the November 2018 MCAA Danish Chapter Newsletter! Here you can catch up news and events of fellow MCAA members in Denmark. We would also like to take the opportunity to invite you all to contribute to the newsletter. Within its short life we have experienced the newsletter and MCAA meetings to be a fantastic platform for networking across scientific disciplines. We look forward to hearing about your research!

News from the MCAA Chapter

Webminar on do's and don'ts on your ERCStG application

Following our new strategy to organize more training activities, on 18th September we organized our first webminar, with the topic: 'Do's and don'ts on your ERCStG application'. The webminar consisted of two parts: first, Prof. Katherine Richardson, former member of ERC evaluation committees, gave us her view on what makes an application outstanding from the standpoint of an evaluator; second, Dr. Maeva Vignes, fundraiser at SDU and member of The Danish Chapter went through the different parts of the application and gave us tips on how to approach them. We hope that you found the webminar useful!

First survey of the members of the Danish Chapter

We recently conducted the first survey of the Danish Chapter. Since we are a new association, this survey aimed at establishing what are the most interesting areas our members would like us to focus on, and evaluate what you thought of our activities so far. A total of 33 people out of our 89 members answered the first survey of The Danish Chapter. Members pointed out at the potential for networking with other MCAA fellows in Denmark, and being informed about funding and career opportunities as the main reasons to join the Chapter. Most of the members who did not participate in the activities claimed lack of time, living outside the Copenhagen area, or having been informed too late, as the main reasons. Our members would like to have more training seminars/webminars and workshops, as well as activities in big science events or local activities to promote networking. We strongly encourage local activities and could provide some funding for them, so if you have an idea please contact us at denmark.chapter@mariecuriealumni.eu.

Meet our Fellows!

Muhammad Imran – Postdoc, Mechanical Engineering, Technical University of Denmark

It is estimated that about 245 PJ of low-grade heat is discarded as waste heat annually. The conventional power conversion technologies cannot convert the low-grade heat into power. In this context, research on low temperature heat to power conversion is of great significance. The organic Rankine cycle (ORC) is among the premium technologies adopted to convert low-grade heat to power. The working principle of the ORC technology is similar to conventional steam Rankine cycle, but uses instead a low boiling point refrigerant as working fluid.
I have been working in the area of the ORC technology for the last 6 years. During my PhD studies at Korea Institute of Energy Research, I was part of the team who successfully developed and commercialized 5kW, 30kW, and 100kW ORC system.

The primary goal of my MSCA project is to develop a control strategy and to design a non-linear model predictive regulator to control a mini-scale ORC unit for the waste heat recovery from an internal combustion engine of a heavy-duty vehicle in a safe and efficient manner. To this end, a state-of-the-art component level dynamic model of the mini ORC unit for heavy-duty vehicles applications is being developed with a focus on low model complexity, low computational time, and sufficiently high accuracy. The dynamic model of the ORC unit will be experimentally validated on a test rig, being designed and

developed at DTU. A non-linear model predictive controller will be developed, driving an ORC module following the engine load profile of a heavy-duty vehicle, maximizing the net power output while ensuring a safe operation. Finally, we will implement the controller on the ORC test rig in order validate the numerical model of the controller and to evaluate its performance on a real system.

For further information you can contact me at: mimran@mek.dtu.dk.

Martin Nielsen - Assistant Professor at DTU Chemistry, Technical University of Denmark

I was a Marie Curie International Outgoing Fellow (IOF) at DTU and Harvard University during 2014-2015. Today, I am an assistant professor in chemistry. My group has two main scientific focus areas:

1) We develop materials for sustainable energy storage and production of renewable commodities. We carry out meticulous studies of cause-effect relationships and, based on these efforts, we rationally design novel materials with superior properties. For example, we develop the world's most efficient protocols for upgrading a range of agricultural waste compounds to products important for the industry. Also, we are leading the development of non-fossil-based liquid energy storage, which is paramount for a future sustainable transportation system.

2) We ask a very fundamental question: What happens when we put two or more metal atoms together in a controlled environment in such a way that the cluster of metals behaves as one single, big superatomic metal? Nature is already hinting towards the answer; just as nature employs metal clusters to carry out e.g. oxygen production in plants, which is otherwise unfeasible to do with traditional enzymes, we might be able to construct artificial metal clusters that can perform in ways we do not even dream of today.

To carry out my research, VILLUM Young Investigator Programme, DFF-Research Project 1, DFF-Danish ERC-Support Programme, Hartmanns Foundation, and Otto Mønsted Foundation currently fund me. I am very thankful for the big support from all of them.

For further information you can contact me at: marnie@kemi.dtu.dk

Upcoming opportunities and events

Call for participants on a study on international mobility and brain drain.

In order to investigate the personal experience of "mobility", the University of Bari and Aalborg, in collaboration with the MCAA Danish Chapter, are launching a study focused, initially, on Italian workers abroad. Participants will be required to take part in three interview sessions of one-hour in which they will have the opportunity to talk about their personal experience with mobility. In this first study, participants must come from Italy and have moved abroad to pursuit a job offer or new life opportunities. They should be two women and two men and, if possible, two of them at first opportunity of job (young workers) and the other two should be workers with experience (senior workers). As for the employment sector, it is required that two participants belong to scientific sectors (engineers, IT, doctors ...), the other two to humanistic fields (philosophy, humanities ...). Find more extended information and contact details here.

MCAA Annual Meeting in Vienna (24th and 25th of February). The annual meeting is a unique opportunity to network with both industry representatives and scientists from across disciplines. This years' thematic focus will be `Research and Innovation beyond the Information Age´. Remember that micro-grants are available to attend the meeting. Apply here before 6th November.

Contact us

Have any comments or suggestions? Want to increase visibility of your research profile, communicate news or exciting new results or advertise an event or job opportunity? Contact Ruth Anderson at: ruth.anderson@bio.ku.dk.

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