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Cologne Institute for
Renewable Energy

CIRE Newsletter of TH Köln

Master Erneuerbare Energien – Master Renewable Energy
Management – Bachelor Erneuerbare Energien – Bachelor
Elektrotechnik / Studienrichtung Elektrische Energietechnik

Review – What has CIRE been up to over the last months?

CIRE helped to organize the TH Köln Symposium "Circular Economy"

The complete management team of the CIRE took part in a symposium of TH Köln regarding circular economy.

This interdisciplinary symposium took place with 10 faculties of TH Köln at the research centre :metabolon in Lindlar as a hybrid session with 31 researchers (mainly professors) on site and up to 32 researchers online.

Furthermore, Marja Eisheuer, Johanna May, Ingo Stadler and Ulf Blieske were strongly involved in the preparation of this important meeting with the target of establishing a new research platform combining all aspects of circular economy - including product development, production, renewable energy, social science, logistics and Recycling.

Further Information in german:

Zirkuläre Wertschöpfung ist die Idee einer nachhaltigen Kreislaufwirtschaft, in der sowohl Abfälle reduziert und vermieden, als auch Ressourcen effektiver genutzt werden. Das Thema „Nachhaltiges Wirtschaften und Ressourcen“ ist im Forschungsprofil der TH Köln fest verankert und fast alle Fakultäten verfügen über Kompetenzen in diesem Bereich. Das Symposium war als Vernetzungstreffen zwischen forschenden Personen der Hochschule gedacht, wie Prof. Dr. Stefan Herzig, Präsident der TH Köln, zum Auftakt der Veranstaltung betonte. „Die Vision einer nachhaltigen Hochschule bedeutet sowohl an die nächsten Generationen als auch groß und ganzheitlich zu denken“, so Herzig.

[LINK](#)

PhD-Student Wolfgang Kusch successfully defended his doctor's thesis in Kassel





Further information in german:

In seiner Dissertation befasste sich Wolfgang Kusch mit der Frage, inwieweit die elektrischen Netze in einer Metropolregion wie Köln für die Anforderungen der Energiewende gerüstet sind. Die Anforderungen werden sich in den kommenden drei Jahrzehnten stark ändern: können die Netze bei Sonnenschein den Strom von in Zukunft hoffentlich deutlich mehr Photovoltaikanlagen aufnehmen? Lässt sich mit den existierenden Netzen der Strombedarf für energetisch sanierte, aber dann ggf. mit elektrischen Wärmepumpen beheizten Gebäuden decken? Und können die zunehmenden Elektroautos über die Netzinfrastruktur geladen werden?

Die Antworten sind vielschichtig. Aber grundsätzlich lautet die Antwort: Ja. Die Netzinfrastruktur sieht sich in Metropolregionen den Herausforderungen bezüglich der Energiewende besser gerüstet als diejenige in ländlichen Regionen. Dennoch werden einiger Orts „Smart-Grid-Technologien“ notwendig werden.

Wolfgang Kusch arbeitete viele Jahre an der Fakultät für Information-, Medien- und Elektrotechnik sowie im Cologne Institute for Renewable Energy CIRE im Labor von Prof. Dr. Ingo Stadler.

Am 21. August 2020 verteidigte Wolfgang Kusch erfolgreich seine Dissertation an der Universität Kassel (Erstbetreuer: Prof. Dr. Albert Claudi).

CIRE's cooperation partner won the german solar prize 2020



Photo: EnergieAgentur.NRW, Eric Greven

Congratulations to the Versorgungsbetriebe Bordesholm GmbH.

[LINK](#)

[LINK](#)

CIRE hosted the 15th SDEWES Conference

The 15th SDEWES Conference, initially planned as an on-site event at the TH Köln, that ended as an online event, took place during 1-5 September 2020. The conference has brought together around 300 scientists, researchers, and experts in the field of sustainable development from 55 countries.

There were over 300 presentations on virtual conference platform, five invited lectures (three of them live keynote speeches and two introductory live lectures during the opening session), and one Panel on Climate Neutrality in Cities.

Prof. Ingo Stadler was the conference co-chair together with another co-chair Prof. Dr. Neven Duic from the University of Zagreb. Some CIRE members, mostly doctoral students, presented their research during the conference.

[LINK](#)

Innovation Valley 2035+ - shaping the future of the Rhenish lignite mining area

How should we shape the landscape after the lignite mining in the Rhenish lignite mining area in North-Rhine Westphalia has been finished? This far-reaching question – the respective measures of recultivation and landscape shaping will last until the year 2080 - was discussed in several workshops with international landscape planning teams and local stakeholders in August.

[LINK](#)

Professor Schneiders joined the jury of the landscape planning competition “Innovation Valley 2035+“ as an energy expert. As a result, a concept for the area of the current lignite mining region Garzweiler II was selected as a basis for future works in the region.

TH Cologne and CIRE are involved in the ongoing process of the structural changes in the lignite mining region via several projects (e.g. H2Pro3, Innovation Park Renewable Energy Park Jüchen) and local cooperations.

[LINK](#)

Status and Perspective of wind energy in North-Rhine-Westphalia – Branchentag Windenergie NRW 2020

In August, the Windbranchentag NRW – a conference on the status and perspective of wind energy in North-Rhine Westphalia and Germany – was held in Gelsenkirchen. Professor Thorsten Schneiders gave a keynote “Thinking energy in a new way”, introducing the concept of integrated energy systems that combine renewable energy sources like wind energy, storage and sector coupling in a new and smarter way with the energy demands of the local consumers. These innovative and sustainable energy systems offer several advantages in terms of stabilizing the grid, providing local green energy supply while reducing costs and technical complexity for the users.

Several CIRE professors and their projects focus on the development of such integrated local energy concepts through the detailed modelling and on spot research.

<https://nrw-windenergie.de/>

Energy Innovation Award NRW – rewarding innovative energy efficiency solutions

Raising energy efficiency in companies is of utmost political priority in addition to the further build-up of renewable energy sources. Therefore, the North-Rhine-Westphalian Ministry of Economics (MWIDE) called for small- and medium-sized enterprises to apply for the “Energy Innovation Award”. Prof. Thorsten Schneiders participated as member of the jury that selected four outstanding projects of raising energy efficiency. The NRW minister of economics Professor Pinkwart personally handed over the prizes, emphasizing the relevance of innovative ideas to save energy.

CIRE is giving energy efficiency a high priority in its works, through the dedicated professorship on energy efficiency by Professor Johanna May and research projects like “Smart Technologies for Small and Medium-sized Enterprises”.

[LINK](#)

CIRE at the PVSEC 2020

Eva-Maria Grommes presented the scientific content of her master thesis at EU PVSEC 2020 in an oral presentation on the 8th of September.

The title of her talk was “The impact of albedo measurements on power density calculations of bifacial modules”.

Project update - digital fellowship test editor beta version

Eberhard Waffenschmidt and Johanna May together with Tobias Panteleit and Max Fröhlich are using the first results of the digital fellowship NRW for easier generation of digital exam questions in ilias.

With start of development in April this year, the test editor still needs improvement for general public usage.

Nonetheless it served for successfully preparing an exam with 350 participants in fundamentals of electrical engineering.

Now we are looking forward to improving the tool so that in the future a large amount of exam questions will be available for both exams and student training.

Project update - OER4EE: digital content for renewable energies kick off

Ingo Stadler and Johanna May together with Hannah Neumann of TH Köln are collaborating with 5 other universities in NRW on generating open educational resources (OER4EE) for renewable energy technology.

The project started on 1st of September and at TH Köln we are focusing on developing videos for wind energy and jupyter notebooks for energy data analysis. Since Corona enforces digital teaching, all developed materials, also from the project partners, will have enhanced testing opportunities and we are looking forward to that.



Impressum:

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