

# Annual report on the activities of the KCORC foundation – 2020

February 2021, prepared by Henrik Öhman, 2021 Chairman

## Introduction

The Knowledge Center on Organic Rankine Cycle technology (KCORC) is a not-for-profit international foundation of volunteers incorporated in the Netherlands. Its premises are in Kluyverweg 1, 2629 HS Delft, The Netherlands (RSIN: 858237799, Chamber of Commerce: 70288283). The KCORC Foundation operates globally, is run by a Board of five volunteers, and its main objective is to promote research, development and implementation of Organic Rankine Cycle (ORC) technology.

ORC technology is used in all fields where thermal energy is available for conversion into mechanical power or electricity. This enhances the use of renewable energy, energy conservation and reduction of greenhouse emissions. Capacities range from tens of kW for automotive applications and domestic cogeneration to the MW size for geothermal, solar and biomass power plants.

The foundation activities are currently funded from surplus from the organization of conferences and from contributions by affiliated universities, research institutes and companies. More information can be found on the KCORC Executive Plan 2020.<sup>1</sup>

The purpose of this document is to give an overview on the activities and results achieved by the KCORC Foundation in the year 2020.

## The biannual International Seminar on ORC systems

The KCORC Foundation organizes this event which is the reference for the ORC community since its first edition in Delft in 2011. The Foundation main activities in this context are to

- launch a call for proposals to identify the location of the event,
- support the organization of the event and helping with finding industrial sponsors,
- contribute to the definition of the Scientific Committee,
- support in the review process of abstracts and papers submitted for presentation at the Seminar and for publication in the associated international peer-reviewed journals,
- confer the best paper award the best paper contributed to the Seminar,
- confer the “Prof. G. Angelino Award” to the best Poster Presentation contributed to the Seminar.

In 2021, the sixth ORC conference. ORC2021, will be organized at the Technical University of Munich (TUM). The conference has been planned and prepared during 2020 and supporting it will be a main activity of KCORC during 2021.

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<sup>1</sup> Available online: [www.kcorc.org/media/medialibrary/2020/05/18-02-20\\_Executive\\_plan\\_KCORC\\_2020.pdf](http://www.kcorc.org/media/medialibrary/2020/05/18-02-20_Executive_plan_KCORC_2020.pdf)

## Scholarships

The KCORC Foundation proudly invests the surplus generated by the Biannual Seminar to fund competitive scholarship for students and researchers aiming to pursue R&D projects in field of ORC technology. These bi-annual scholarships cover travel and accommodation related to short-term research projects of 3 – 6 months. The grants amount to €3000 – €10,000, depending on project duration and location of the hosting institution.

During 2020 no scholarship was awarded due to financial reasons. KCORC will again award scholarships once the economic effects of organizing a conference in a Covid-19 environment have been clarified. KCORC expect to resume the scholarships process late 2021.

## Standards & Regulations

There is a committee active within the Foundation which involves professionals from companies and academic institutions which aims at defining “suggested standards and regulations guidelines” in the field of ORC systems. The long-term vision is to foster the establishment of a recognized international standard devoted to ORC technology, its design, performance definition, and so on. During 2020 the international committee gathered 3 times through Skype. Technical Guidelines for ORC-products has been developed thanks to the contributions of the committee members.

KCORC also act as advisory partner in the development of the new ECN-standard for < 100 kWe ORC products.

## Thermal Energy Harvesting Advocacy Group

During the year 2020 the Thermal Energy Harvesting Advocacy Group (TEHAG) has developed a white paper explaining opportunities and status of Energy Harvesting with ORC-technology. Furthermore the committee has had a large number of meetings and attended public seminars arranged by the EU Commission. KCORC is an active member of SET Plan Action 6 and has contributed significantly with correct information about opportunities with ORC-technology in Energy Harvesting.

Through TEHAG KCORC is a registered association in the EU Transparency Register which allows active contributions to processes such as Horizon Europe, the EU Green Deal and the Strategic Energy Technology Implementation Plan.

TEHAG is planning for arranging series of seminars on the topic of Energy Harvesting in Process Industry within the framework of SET Plan Action 6.

## Collaborations

The Foundation works constantly to establish collaborations with other organizations active in the promotion of technologies related with energy conservation and the exploitation of renewable resources.

In 2020 KCORC established a collaboration with ETN (European Turbo Network) for the work of TEHAG.

In cooperation with IHTI ORC Power systems committee it was agreed to integrate the current ORC-track within ASME into the Cycle Innovations-track.

## The KCORC Website

The KCORC website<sup>2</sup> is the main channel through which the Foundation activities are disseminated. The website is constantly developed and maintained by an Editorial Committee whose Chairman reports monthly to the board.

This website is the hub of a community of professionals from the academia and the industry dedicated to the promotion of ORC technology. Anyone can become a member of KCORC by submitting a registration form via the website, which is then approved by the Secretary of the Board. In case of doubt, the Secretary reports to the Board for a decision.