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Second Conference of Computational Methods in Offshore Technology and First Conference of Oil and Gas Technology (COTech & OGTech 2019)

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Second Conference of Computational Methods in Offshore Technology and First Conference of Oil and Gas Technology (COTech & OGTech 2019)

November 27 – 29, 2019, University of Stavanger, Norway

Preface

This conference is organized as a joint event of the COTech (Computational Methods in Offshore Technology) and OGTech (Oil and Gas Technology) conferences. The COTech conference started as part of the research and dissemination activities of the Program Area for research "COTech - Computational methods in Offshore Technology" at Faculty of Science and Technology, University of Stavanger (UiS). This Program Area for Research was founded in 2015 with seven professor, four associate professors, two adjunct professors and five research (PhD) students from the Department of Mechanical and Structural Engineering and Materials Science (IMBM), whose expertise and competence lies primarily within use of computational methods such as finite element methods, boundary and volume element methods, computational fluid dynamics and the like in marine and subsea technology, marine operations, design and analysis of mechanical systems, integrity and reliability of offshore structures and mechanical systems, renewable energy and wind engineering. In the offshore-related engineering area in particular, numerical computation approach is nowadays not only serving as a means to cultivate and realize innovative ideas, but also it is becoming the primary choice to solve complex engineering problems for the harsh and unfriendly environment in the Arctic.

The OGTech conference is organized as part of a collaborative project called UTFORSK between a team of researchers from University of Stavanger and Gubkin Russian University of Oil and Gas. The overall aim of the project is to make the team stronger and more sustainable. Among others, the project focuses on building a bridge of collaboration in research and education between the two countries, Norway and Russia, that share the Arctic region and to strengthen the research aspects of the Offshore Technology field in Arctic environment. By facilitating mobility of researchers and staff in both directions, the project aims to provide a common and successful learning environment for young researchers (Masters and PhDs) to make sure that students have skills and knowledge required in order to face the challenges that the Offshore industry meets in the North - such as environmental aspects and Offshore Technology within subsea/ marine structures in cold climate.

In general, the conference is intended to provide a platform for academics and professionals working within both the Offshore and Oil and Gas technologies to come together, present their recent works in the area, exchange ideas, and establish professional networks. It will serve as a forum for a multidisciplinary research and brings together



Norwegian and invited foreign researchers to enable them exchange their research experience and disseminate their results within the involved fields. The conference is organized under 8 thematic areas, which will also serve as conference sessions.

1. *Wind Engineering and Renewable Energy*
2. *Advanced Computational Methods and Applications in Marine Technology*
3. *Computational Mechanics and Design Optimization*
4. *Structural Integrity Management and Life Extension of Structures*
5. *Oil & Gas Field Development in the Cold Climate Region*
6. *Energy Resources Development in the Arctic*
7. *Technologies in the Upstream Sector in Oil- and Gas Industry with Emphasis on the High North*
8. *Industrial Engineering in Industry 4.0*

Among the submitted manuscripts, 66 full papers passed the review process. The review work was conducted according to the review policy of IOP conference series where each paper was reviewed by at least two reviewers involving both national and international reviewers. Eight known experts in the area were invited to present keynote papers from different countries.

The conference committee and editors of this proceeding would like to thank all the reviewers and authors of the papers in this proceeding for their valuable contributions to COTech & OGTech 2019 conference. The financial support from Department of Mechanical and Structural Engineering and Materials Science at University of Stavanger as well as the project funding from Diku (Norwegian Agency for International Cooperation and Quality Enhancement in Higher Education) through the UTFORSK project are highly appreciated.

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