

# 中英海洋可再生能源合作研讨会

UK-China Joint Offshore Renewable Energy Conference

# 会议手册

CONFERENCE GUIDE

2019年7月8-9日 中国·青岛

8<sup>th</sup> to 9<sup>th</sup> July 2019, Qingdao, China



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## 会议须知

尊敬的各位参会代表：

欢迎您参加中英海洋可再生能源联合研究计划与自然资源部国家海洋技术中心在青岛市府新大厦共同举办的第二届中英可再生能源合作研讨会。英国工程与自然科学研究理事会与自然环境研究理事会通过牛顿基金的方式为本次活动提供经费支持，中国国家自然科学基金委员会同样也提供了中方的项目资金支持。本次活动及双方的支持是为提高中国在海洋能领域的研究创新水平及国际合作能力。为会议期间便利，请认真阅读以下会议须知：

### (一) 会议安排：

7月7日晚18:00-20:00 欢迎活动，酒店三楼府新厅

7月8日上午8:30-12:30, 下午13:30-17:00, 会议中心一楼报告厅

7月9日上午9:00-12:30, 下午13:30-18:00, 会议中心一楼报告厅

### (二) 会议地点：

青岛市府新大厦，青岛市市南区闽江路5号。

联系电话:0532 8591 3688

### (三) 用餐：

对于英方参会人员，会议期间请至府新大厦三楼府新厅用餐。其他参会人员食宿自理。

### (四) 请您准时出席会议并提前10至15分钟进入会场

### (五) 会议期间请关闭手机电源或设为静音状态

### (六) 会议期间，如有任何意见和要求，请随时与会议工作组联系

会议联系人：崔琳 13820128962 赵宇梅 13920335919

李蒙 15022725061 王芳 15902299185

## Conference Notice

Dear Distinguish Guests:

Welcome to attending the 2nd UK-China Joint Offshore Renewable Energy Conference which is jointly held by the UK-China Centre of Offshore Renewable Energy, the National Ocean Technology Centre and the Ministry of Natural Resources in the Fuxin Hotel, Qingdao of China.

The Engineering and Physical Sciences Research Council (EPSRC) and the Natural Environment Research Council (NERC) are supporting the projects with almost £4 million of funding, which is distributed through the Newton Fund. The National Natural Science Foundation of China (NSFC) is providing further support towards all of the projects. The support is aiming to promote the research and innovation of ORE in China and enhance international collaboration.

For your comfort and convenience during the conference, please read the following notice carefully:

#### 1. Conference Time-Table

7th July, 18:00-20:00 Welcome Reception Fuxin Hall in 3rd Floor of Hotel

8th July, Morning 8:30-12:00; Afternoon 13:30-17:30

Conference Hall in 1st Floor of Conference Centre

9th July, Morning 9:00-12:30; Afternoon 13:30-18:00

Conference Hall in 1st Floor of Conference Centre

#### 2. Conference Hotel

Qingdao Fuxin Hotel: No.5 Minjiang Road, Shinan District, Qingdao, China, Tel: 0532 8591 3688

3. For all UK participants, meals will be provided at 3rd floor Fuxin Hall throughout the event at the hotel.

4. Please be punctual when attending the conference, a 10-15 minutes earlier would be the best for entering the conference.

5. Please power off your mobile phone or turn it to silence mode during the conference session.

6. If any question or demand, please contact with the organizer:

CUI Lin/Mobile : 13820128962 ZHAO Yumei/Mobile: 13920335919

LI Meng/Mobile:15022725061 WANG Fang/Mobile : 15902299185



## 会议介绍

### 合作背景

中英两国研究者正在合作开展一系列研究项目来发展下一代可适应的海洋可再生能源技术以实现安全、可靠、经济和高效的清洁能源供给。五项跨学科领域合作的研究项目作为整个中英海洋可再生能源联合研究计划的一部分已经正式启动。这些研究项目旨在应对影响海洋可再生能源系统发展的关键技术与工程挑战,以最大化其环境与社会经济效益,从而了解和改进关于海洋能的应用部署、规划和管理及其他关键性考虑。

英国工程与自然科学研究理事会(EPSRC)与自然环境研究理事会(NERC)为英方项目提供研究资金支持项目研究,并通过牛顿基金(Newton Fund)的方式资助。中国国家自然科学基金委员会(NSFC)同样也提供了中方项目的资金支持。双方在合作研究计划下开展的中英海洋可再生能源合作活动同样也得到了来自国家海洋技术中心(NOTC)的支持。国家海洋技术中心作为中国自然资源部(MNR)的下属机构,致力于提高中国海洋能领域的国际合作能力及研究创新水平。

### 中英海洋能研究合作项目

该项目是中英两国在海洋可再生能源领域跨研究界与企业的一种合作伙伴关系,并随之建立了跨国家的海洋能合作机制(UK&CHN CORE,www.ukchn-core.com)。该合作机制与英国海洋能联合研究计划(ORE Supergen Hub UK)形成了强有力的联盟关系,使双方在学术机构、政府及非政府组织以及企业合作伙伴之间建立双边的沟通渠道。

项目的总体目标是实现碳减排以及示范海洋能技术的社会效益,将通过中英间的研究与知识共享实现,以鼓励在能源领域的创新和提高生产率。

UK&CHN CORE正在应对更大范围内与海洋可再生能源(风、浪、流)技术相关的必要挑战,通过嵌入在下列五个中英合作项目的研究创新来体现:

**MOD-CORE: 海洋可再生能源转换系统的建模、优化与设计(EP/R007756/1)**, 开展基础建模与模型验证工作,形成可实现发电装置虚拟实型机的能力,这种能力将显著加速工业开发过程中的降低风险。

**INNO-MPP: 离岸集成化多目标用途平台创新挑战研究(EP/R007497/1)**, 集成多用途平台技术,旨在从多个不同维度如技术、经济性、社会、环境及法规方面评估评价其效果。

**FENGBO-WIND: 将环境信息整合入电网-海上风电大数据(EP/R007470/1)**, 整合能够处理当地气象、海洋环境与沉积物复杂相互作用的计算模拟方法,目的是开发一种包含环境、风场空气动力学、机组响应和并网特性在内的海上风电场分析工具。

**ResIn: 海上浮动风电平台的弹性集成耦合设计方法(EP/R007519/1)**,开发气动-弹性模型并基于一种风险告知方法提高设计能力,实现极端事件或环境下的系统弹性。

**Extreme wind: 下一代海上风力机的极端风浪载荷研究(EP/R007632/1)**, 在台风条件下的海洋环境建模,包括i) 建立理想环境下机组的时序环境载荷;ii) 在极限状态和疲劳载荷下分析机组的结构和岩土地质设计。

组织者:

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## Conference Background and Objectives

### Collaboration Background

Researchers from the UK and China are collaborating on a series of projects to develop the next generation of resilient offshore renewable energy (ORE) technologies to enable the safe, secure, cheap and efficient provision of clean energy.

Five collaborative, interdisciplinary projects have been announced as part of the Joint UK-China Offshore Renewable Energy Research Program. They aim to tackle key technology and engineering challenges affecting the development of ORE systems, maximize their environmental and socio-economic benefits, and inform and improve other key considerations such as deployment, planning and management.

The Engineering and Physical Sciences Research Council (EPSRC) and the Natural Environment Research Council (NERC) are supporting the projects with almost £4 million of funding, which will be distributed through the Newton Fund. The National Natural Science Foundation of China (NSFC) is providing support for all of the projects.

The Joint UK-China Offshore Renewable Energy activities are also supported by the National Ocean Technology Centre (NOTC) an affiliation of the Ministry on National Resources (MNR). The support is aiming to promote the research and innovation of ORE in China and enhance international collaboration.

### The UK-CHINA ORE project

These projects are industrial and educational partnership between the UK and China for the Offshore Renewable Energy sector. A cross-national UK-China Centre for Offshore Renewable Energy - UK&CHN|CORE ([www.ukchn-core.com](http://www.ukchn-core.com)) has been established that is strongly aligned with the ORE Supergen Hub(<https://www.supergen-ore-hub>), allowing a strong bilateral interface to UK and Chinese academic institutions, governmental and non-governmental organizations and industry partners.

The overall aim of the projects is to achieve carbon reduction and to demonstrate the social impact of this. This will be done through the sharing of knowledge and research between the UK and China to encourage innovation and generate productivity in the energy sector.

UK&CHN|CORE is addressing challenges of wide-ranging technology needs related to Offshore Renewable Energy(wave, offshore wind, current) through several innovation aspects embedded in five projects:

**UK-China MOD-CORE: Modelling, Optimisation and Design of Conversion for Offshore Renewable Energy (EP/R007756/1)**, Fundamental modelling and validation work that will lead to the capability of virtual prototyping. Such a capability will significantly accelerate and de-risk the development work in industry.

**INNO-MPP: Investigation of the novel challenges of an integrated offshore Multi-Purpose Platform (EP/R007497/1)**, Integration of multi-purpose offshore technologies, aiming to assess several dimensions, incl. technological, economic, social, environmental and legal aspects.

**FENGBO-WIND: Farming the Environment into the Grid: Big data in Offshore Wind (EP/R007470/1)**, Integrated computational simulation approaches capable of handling the complex interactions between the local atmosphere, the coastal ocean and sediment; aiming to develop an environment, farm aerodynamics, turbine response and grid integration tool for offshore wind farms.

**ResIn: Resilient Integrated-Coupled FOW platform design methodology (EP/R007519/1)**, Development of aero-elastic models and design enhancements informing a risk based design approach and enhancing resilience for extreme events.

**Extreme wind and wave loads on the next generation of offshore wind turbines (EP/R007632/1)**, Modelling of the ocean environment in typhoon conditions including creation of realistic environmental load time-histories on turbines; and analysis of the structural and geotechnical design of turbines under ultimate state limit and fatigue loadings.

Organizer:

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## 会议日程

### 7月7日(星期日) 欢迎之夜活动

17:00	会议报到
18:00 – 20:00	中英海洋能研讨会欢迎活动(府新大厦三楼府新厅)  欢迎致辞;开幕词Lars Johanning  中方欢迎致辞(彭伟, 国家海洋技术中心副主任)  英方欢迎致辞(Jessica Henry, 英国驻华使馆一秘, 能源团队负责人)
19:00 – 22:00	会议代表晚宴(府新大厦, 只限会议委员会成员)

### 7月8日(星期一) 上午

8:30	会议报到
9:00 – 9:30	<b>开幕式(会议中心主会议厅);主持人:彭伟</b>
9:00 – 9:10	欢迎致辞:冯磊, 经济运行处处长, 自然资源部海洋战略规划与经济司(中方)
9:10 – 9:20	欢迎致辞;Jessica Henry, 英国驻华使馆一秘, 能源团队负责人(英方)
9:20 – 9:30	欢迎致辞:姜青春, 副局长, 山东省海洋局;于炳波, 副局长, 青岛市科学技术局
9:30 – 10:20	<b>跨国家研究合作的重要性;主持人:Lar Johanning, 联合主持人:崔琳</b>
9:30 – 9:50	主旨报告——海洋可再生能源公共支撑与基础设施体系  报告人:彭伟, 中心副主任, 国家海洋技术中心(中方)
9:50 – 10:10	主旨报告——海洋能促进中心的国际性研究与开发  报告人:Chong Ng, 应用研究主管, 英国创新署海洋能促进中心(英方)
10:10 – 10:20	问答环节
10:20 – 10:30	茶歇
10:30 – 11:10	<b>国际视野:中英海洋可再生能源的重要性;主持人:Thomas Adcock, 联合主持人:宁德志</b>
10:30 – 10:45	主旨报告——海洋可再生能源装置示范需求  报告人:史宏达教授, 山东省海洋工程重点实验室常务副主任, 中国海洋大学(中方)
10:45 – 11:00	主旨报告——英国Supergen Hub海洋能研究计划  报告人:Deborah Greaves教授, SupergenHub海洋能研究计划负责人, 普利茅斯大学(英方)

11:00 – 11:10	问答环节
11:10 – 12:10	<b>海洋可再生能源研究需求与成功经验;主持人:史宏达, 联合主持人:赵晓伟</b>
11:10 – 11:35	主旨报告——中国海上风电的研究开发需求  报告人:陆忠民, 副总经理/总工程师, 上海勘测设计研究院, 中国长江三峡集团(中方)
11:35 – 12:00	主旨报告——NAOME在海洋可再生能源领域研究与发展  报告人:Atilla Incecik教授, 副校长/工程学院执行院长, 斯特拉斯克莱德大学(英方)
12:00 – 12:10	问答环节
12:10 – 12:30	合影
12:30 – 12:45	合作备忘录签署(仅限特邀人员参加)
12:30 – 13:30	自助午餐

### 7月8日(星期一) 下午

13:30 – 14:20	<b>中英联合研究与创新计划;主持人:Chong Ng, 联合主持人:史宏达</b>
13:30 – 13:50	主旨报告——中英联合研究倡议  报告人:李文聪博士, 欧洲事务处处长, 国家自然科学基金委国际合作局(中方)
13:50 – 14:10	主旨报告——中英海洋可再生能源联合研究与创新  报告人:Ruhina Miller博士, 投资主管, 英国工程与自然科学研究理事会(英方);  通过远程视频接入
14:10 – 14:20	问答环节
14:20 – 15:30	<b>中英海洋可再生能源合作项目研究进展(一);主持人:Atilla Incecik, 联合主持人:宁德志</b>
14:20 – 14:40	项目报告——中英海洋可再生能源合作机制概况(UK&CHN CORE)  报告人:Lars Johanning, 埃克塞特大学(英方)
14:40 – 15:00	项目报告——将环境信息整合入电网—海上风电大数据(FENGBO-WIND)  报告人:Georgios Deskos, 帝国理工学院(英方)
15:00 – 15:20	项目报告——离岸集成化多目标用途平台创新挑战研究(INNO-MPP)  报告人:Maurizio Collu, 斯特拉斯克莱德大学(英方)

## 会议日程

15:20 – 15:30	问答环节
15:30 - 15:50	茶歇
15:50 – 17:00	<b>中英海洋可再生能源合作项目研究进展(二);主持人:宁德志, 联合主持人:Atila Incecik</b>
15:50 – 16:10	项目报告——下一代海上风力机的极端风浪载荷研究(Extreme Wind)  报告人:Thomas Adcock, 牛津大学(英方)
16:10 – 16:30	项目报告——海上浮动风电平台的可适应集成耦合设计方法(ResIn)  报告人:Philipp Thies, 埃克塞特大学(英方)
16:30 – 16:50	项目报告——海洋可再生能源转换系统的建模、优化与设计(MOD-CORE)  报告人:Alasdair McDonald, 斯特拉斯克莱德大学(英方)
16:50 – 17:00	问答环节
17:30	自助晚餐

### 7月9日(星期二) 上午

9:00 – 10:30	<b>海洋可再生能源研究的巨大挑战;主持人:Deborah Greaves, 联合主持人:张永良</b>
9:00 – 9:15	技术报告——截止型波浪能转换装置的研究与优化  报告人:游亚戈, 中国科学院广州能源研究所(中方)
9:15 – 9:30	技术报告——未来创新需求  报告人:James Battensby, 英国创新署海洋能促进中心(英方)
9:30 – 9:40	问答环节
9:40 – 9:55	技术报告——海洋能源岛创新技术  报告人:耿敬, 副院长, 哈尔滨工程大学(中方)
9:55 – 10:10	技术报告——研究创新与国际合作  报告人:Lars Johanning, 国际联合主席, 中国环境与发展国际合作委员会可再生能源工作组(英方)
10:10 – 10:20	问答环节
10:20 - 10:30	茶歇
10:30 – 11:30	<b>海洋可再生能源资源与经济性评价;主持人:张永良, 联合主持人:Deborah Greaves</b>
10:30 – 10:45	技术报告——中国海洋可再生能源资源评估  报告人:汪小勇/武贺, 国家海洋技术中心(中方)

10:45 – 11:00	技术报告——海洋能源中的海洋气象问题  报告人:Thomas Adcock, 牛津大学(英方)
11:00 – 11:10	问答环节
11:10 – 11:25	技术报告——M4型多浮体波浪能装置的开发与经济性潜力  报告人:孙亮, 武汉理工大学(中方)
11:25 – 11:40	技术报告——PESTLE:超越技术经济性评估之外的需求  报告人:Maurizio Collu, 斯特拉斯克莱德大学(英方)
11:40 –11:50	问答环节
11:50 – 12:30	<b>海洋可再生能源测试与认证;主持人:Maurizio Collu, 联合主持人:张大海</b>
11:50 – 12:05	技术报告——海洋可再生能源装置实验室测试  报告人:李晔, 上海交通大学(中方)
12:05 – 12:20	技术报告——通过标准和认证手段实现海洋能技术创新  报告人:Claudio Bittencourt, 挪威-德国劳式船级社(英方)
12:20 – 12:30	问答环节
12:30 – 13:30	自助午餐

### 7月9日(星期二) 下午

13:30 – 14:50	<b>潮流能技术发展与产业化;主持人:张大海;联合主持人:Maurizio Collu</b>
13:30 – 13:45	技术报告——300千瓦潮流能机组的特点与性能  报告人:袁凌, 副总经理, 国电联合动力技术有限公司(中方)
13:45 – 14:00	技术报告——潮流能利用的成功经验Meygen项目  报告人: Steve Allsop, SIMEC亚特兰蒂斯能源公司(英方)
14:00 – 14:10	问答环节
14:10 – 14:25	技术报告——舟山潮流能研究与国家示范工程的发展  报告人:李伟, 浙江大学(中方)
14:25 – 14:40	技术报告——潮流能机组在理想条件和阵列中的不稳定载荷分析  报告人:Timothy Stallard, 曼彻斯特大学(英方)
14:40 –14:50	问答环节



会议日程

14:50 – 16:20	<b>固定式海上风电研究与技术创新需求;主持人: Claudio Bittencourt, 联合主持人: Thomas Adcock</b>
14:50 – 15:05	技术报告——海上风电机组基础设计优化 报告人: 朱嵘华, 浙江大学/浙江华蕴海洋工程技术有限公司 (中方)
15:05 – 15:20	技术报告——布莱思海上风电示范装置的重力式基础及状态监测 报告人: Jack Paterson, 法国电力集团 (英方)
15:20 – 15:30	问答环节
15:30 - 15:40	茶歇
15:40 – 15:55	技术报告——基于惯性仪的海上风电机组被动结构型控制方法 报告人: 吴锋/胡银龙, 河海大学 (中方)
15:55 – 16:10	技术报告——多种海洋可再生能源的集成控制策略及能源管理 报告人: 岳红, 斯特拉斯克莱德大学 (英方)
16:10 – 16:20	问答环节
16:20 – 17:40	<b>漂浮式海上风电研究与技术创新需;主持人: Thomas Adcock, 联合主持人: Claudio Bittencourt</b>
16:20 – 16:35	技术报告——漂浮式风电技术在中国海域的应用实践 报告人: 林毅峰/林琳, 上海勘测设计研究院, 中国长江三峡集团 (中方)
16:35 – 16:50	技术报告——漂浮式潮流能和海上风能开发的挑战 报告人: Gino Bawn, ITP能源有限公司 (英方)
16:50 – 17:00	问答环节
17:00 – 17:15	技术报告——可利用深水能源的漂浮式风机技术 报告人: 施伟, 大连理工大学 (中方)
17:15 – 17:30	技术报告——基于多孔结构的漂浮式风机运动阻尼研究 报告人: Ed Mackay, 埃克塞特大学 (英方)
17:30 – 17:40	问答环节
17:40 – 17:55	跨国海洋可再生能源创新需求与合作机会; 专题研讨
17:55 – 18:00	会议总结; 未来活动 (下一届研讨会预告)
18:00	会议闭幕
18:30	自助晚餐

Program

Sunday 7th July Welcome Evening:

17:00	Registration
18:00 – 20:00	ORE UK-China Reception (3rd Floor Fuxin Hall, Qingdao Fuxin Hotel) Welcome Address; Opening: Lars Johanning China welcome address (PENG Wei, Deputy Director of National Ocean Technology Centre) UK welcome address (Jessica Henry, Head of Energy Team, British Embassy)
19:00 – 22:00	Delegation Dinner - QINGDAO FUXIN HOTEL(event committee members only)

Monday 8th July Morning

8:30	Registration
9:00 – 9:30	Opening session (Conference Hall); Chair: PENG Wei 9:00 – 9:10 Welcome Address, China FENG Lei, Division Director, Department of Marine Strategic Planning & Economic, Ministry of Natural Resources 9:10 – 9:20 Welcome Address, UK Jessica Henry, Head of Energy Team, British Embassy Beijing(UK) 9:20 – 9:30 Welcome Address, Qingdao JIANG Qingchun, Deputy Director-General, Shandong Provincial Ocean Bureau YU Bingbo, Deputy Director-General., Qingdao Municipal Bureau of Science and Technology
9:30 – 10:20	<b>Importance of cross-country ORE R&amp;D; Chair: Lars Johanning, Co-Chair: CUILin</b> 9:30 – 9:50 'ORE public support and infrastructure system' PENG Wei, Deputy General Director, National Ocean Technology Centre (China) 9:50 – 10:10 'ORE Catapult – International R&D' Chong Ng, Head of Applied Research, ORE Catapult (UK) 10:10 – 10:20 Q&A
10:20 – 10:30	<b>Break</b>
10:30 – 11:10	<b>The international perspective; Importance of Offshore Renewable Energy in China and UK; Chair: Thomas Adcock, Co-Chair: NING Dezhi</b>



## Program

10:30 – 10:45	'Offshore renewable energy demonstrator needs' Prof SHI Hongda, Executive Deputy Director of Shandong Provincial Key Laboratory on Ocean Engineering – Ocean University of China(China)
10:45 – 11:00	'Introduction to the ORE Supergen Hub' Prof Deborah Greaves, University of Plymouth, Head of the School of Engineering and ORE SupergenHub lead (UK)
11:00 – 11:10	Q&A
11:10 – 12:10	<b>ORE R&amp;D the need and successes; Chair: SHI Hongda, Co-Chair: ZHAO Xiaowei</b>
11:10 – 11:35	'Research and development activities in offshore renewable energy at NAOME' Prof Atilla Incecik, Associate Principal & Executive Dean of the Faculty of Engineering, Strathclyde University (UK)
11:35 – 12:00	'R&D need of offshore wind in China' LU Zhongmin, Vice President and Chief General Engineer, Shanghai investigation, Design and Research Institute, China Three Gorges Corporation (China)
12:00 – 12:10	Q&A
12:10 - 12:30	<b>Photograph</b>
12:30 - 12:45	<b>MOU Signature (invite members only)</b>
12:30 - 13:30	<b>Buffet Lunch</b>

### Monday 8th July Afternoon

13:30 - 14:20	<b>UK-China joint research and innovation programs; Chair: Chong Ng, Co-Chair: SHI Hongda</b>
13:30 – 13:50	'Joint UK &China research initiatives' Dr LI Wencong, Division Director, Bureau of International Cooperation, National Natural Science Foundation (China)
13:50– 14:10	'UK-China joint offshore renewable energy R&D' Dr Ruhina Miller, Portfolio Manager, Energy Engineering and Physical Sciences Research Council (UK); via video link
14:10 – 14:20	Q&A
14:20 - 15:30	<b>UK-CHN ORE projects I; progress update; Chair: Atilla Incecik, Co-Chair: NING Dezhi</b>
14:20 – 14:40	UK-CHN ORE overview (Lars Johanning)

## Program

14:40 – 15:00	ENGBO-WIND project (Georgios Deskos)
15:00 – 15:20	INNO-MPP project (Maurizio Collu)
15:20 – 15:30	Q&A
15:30 - 15:50	<b>Break</b>
15:50 - 17:00	<b>UK-CHN ORE projects II; progress update; Chair: NING Dezhi, Co-Chair: Atilla Incecik</b>
15:50 – 16:10	Extreme loads on offshore wind farms project (Thomas Adcock)
16:10 – 16:30	ResIn project (Philipp Thies)
16:30 – 16:50	MOD-CORE project (Alasdair McDonald)
16:50 – 17:00	Q&A
17:30	<b>Buffet Dinner</b>

### Tuesday 9th July Morning

9:00 - 10:30	<b>Research and Great Challenge in Offshore Renewable Energy; Chair: Deborah Greaves, Co-Chair: ZHANG Yongliang</b>
9:00 – 9:15	'Research and optimization of terminative type WEC' YOU Yage, Guangzhou Institute of Energy Conversion, Chinese Science Academy (China)
9:15 – 9:30	'Future Innovation needs' James Battensby, ORE Catapult (UK)
9:30 – 9:40	Q&A
9:40 – 9:55	'Innovation technology for ocean energy island' GENG Jing, Deputy Dean of Shipbuilding Engineering College, Harbin Engineering University(China)
9:55 – 10:10	'Research Needs and International Collaboration' Lars Johanning, International Co-Chair TT5 'Renewable Energy' CICCED,(UK)
10:10 – 10:20	Q&A
10:20 - 10:30	<b>Break</b>
10:30 -11:30	<b>Resource and Economic Assessment of ORE; Chair: ZHANG Yongliang, Co-Chair: Deborah Greaves</b>
10:30 – 10:45	'Assessment of marine renewable energy resources in China' WANG Xiaoyong/WU he, National Ocean Technology Centre (China)

## Program

10:45 – 11:00	'Metocean problems in marine energy'
	Thomas Adcock, University of Oxford (UK)
11:00 – 11:10	Q&A
11:10 – 11:25	'Development and economic potential of multi-float multi-mode wave energy convertor M4'
	SUN Liang , Wuhan University of Technology (China)
11:25 – 11:40	'PESTLE: need to go beyond techno-economic assessment'
	Maurizio Collu, University of Strathclyde (UK)
11:40 – 11:50	Q&A
11:50 – 12:30	Test and Certification in Offshore Renewable Energy; Chair: Maurizio Collu, Co-Chair: ZHANG Dahai
11:50 – 12:05	'Laboratory test for offshore renewable energy'
	LI Ye, Shanghai Jiaotong University(China)
12:05 – 12:20	'Dealing with innovation through standards and certification'
	Claudio Bittencourt, DNVGL (UK)
12:20 – 12:30	Q&A
12:30 – 13:30	Buffet Lunch

### Tuesday 9th July Afternoon

13:30 – 14:50	Tidal Current Energy Development and Industrialization; Chair: ZHANG Dahai, Co-Chair: Maurizio Collu
13:30 – 13:45	'The characteristics and performance of a 300kW tidal energy turbine'
	YUAN Ling, Deputy General Manager, United Power(China)
13:45 – 14:00	'Tidal Energy Success'
	Steve Allsop, SIMEC Atlantic Energy(UK)
14:00 – 14:10	Q&A
14:10 – 14:25	'Development of tidal current energy research and national demonstration project in Zhoushan'
	LI Wei, Zhejiang University(China)
14:25 – 14:40	'Analysis of unsteady loads on tidal turbines in realistic conditions and arrays'
	Timothy Stallard ,Manchester University (UK)
14:40 – 14:50	Q&A
14:50 – 16:20	Innovation and Research Needs in Fixed Offshore Wind; Chair: Claudio Bittencourt, Co-Chair: Thomas Adcock
14:50 – 15:05	'Design optimization of offshore wind turbine foundations'
	ZHU Ronghua, Zhejiang University/RichTech (China)

## Program

15:05 – 15:20	'Gravity Base Foundations and Condition Monitoring at the Blyth Offshore Demonstrator'
	Jack Paterson, EDF (UK)
15:20 – 15:30	Q&A
15:30 – 15:40	Break
15:40 – 15:55	'Passive structural control with inerters for offshore wind turbines'
	WU Feng/HU Yinlong, Hehai University (China)
15:55 – 16:10	'Multi-source ORE: integrated control strategy and power management'
	YUE Hong, Strathclyde University (UK)
16:10 – 16:20	Q&A
16:20 – 17:40	Innovation and Research Needs in Floating Offshore Wind; Thomas Adcock, Co-Chair: Claudio Bittencourt
16:20 – 16:35	'Application and practice of floating offshore wind technology in China sea'
	LIN Yifeng/LIN Lin, Shanghai Investigation, Design & Research Institute, China Three Gorges Corporation (China)
16:35 – 16:50	'Challenges for floating tidal and floating offshore wind development'
	Gino Bawn, ITP Energised Ltd(UK)
16:50 – 17:00	Q&A
17:00 – 17:15	'Floating wind-harnessing the energy from deepwater'
	SHI Wei, Dalian University of Technology (China)
17:15 – 17:30	'Motion damping of floating wind turbines using porous structures'
	Ed Mackay, University of Exeter (UK)
17:30 – 17:40	Q&A
17:40 – 17:55	Cross-border ORE Innovation Needs & Opportunities; Panel Session
17:55 – 18:00	Round-up; Future event
18:00	- End -
18:30	Buffet Dinner

## Short Biography of Speaker/Chair (UK)



### Jessica Henry, Head of Energy, British Embassy Beijing, China

Jessica Henry is First Secretary and leads the energy team responsible for building strong government-to-government links between the UK and China on energy policy, at the British Embassy Beijing. She previously led on managing the UK contribution to the EU budget in the Prime Minister's European and Global Issues Secretariat. Before that, Jessica worked in the Department for Energy and Climate Change, designing legislation to support electricity market reform and improve the regulatory system for unconventional gas exploration, supporting two separate pieces of primary legislation (Energy Act 2013 and Infrastructure Act 2015). Before joining the Civil Service, Jessica worked for a Member of Parliament and in the political statistics company YouGov. She holds qualifications in both International Relations and Management Accounting, with advanced Mandarin Chinese.



### Dr Stephen Wyatt, Research & Disruptive Innovation Director, ORE Catapult

Stephen joined the Catapult in December 2013 as strategy director, bringing considerable experience in the low carbon arena, most notably in his previous role as director of innovation at the Carbon Trust, where he played a key part in writing the business plan and strategy for ORE Catapult.

At the Carbon Trust, he was responsible for managing a portfolio of innovation activity in offshore renewables, biomass heat and industrial energy efficiency, and managed issues relating to both government and industry. He was also previously the head of marine energy, leading a team that designed the Carbon Trust's wave and tidal energy activity via a series of programmes to prove and develop marine energy and shape government thinking.

Prior to joining the low-carbon industry, Stephen spent three years as materials development engineer at Cosworth Racing Limited, where he led a number of long-term development projects and sourced solutions to in-service problems for the Jaguar Racing Formula 1 engine programme.



### Dr. Chong Ng, Head of Applied Research, Offshore Renewable Energy Catapult, UK

Dr Chong Ng is the Head of Applied Research at the UK's Offshore Renewable Energy Catapult, Technical Director of eGrid and the Board member of TUS-ORE Catapult Research Centre. His team focus on innovative ORE technologies and novel test & validation solutions developments in the areas of offshore renewable energy covers turbine rotor, powertrain, and electrical infrastructure.

Before this, as the Head of Validation, he led a multi-disciplinary engineering team delivered full scale multi-megawatts wind and tidal turbine nacelle/powertrain validation projects and tens of million pounds world class full scale test facility developments. Chong is a Chartered Engineer and has a PhD in electrical power quality. He has more than 20 years of collective experience in renewable industry, power conversion industry and scientific research. Chong has published more than 40 international research papers, a book in offshore wind farm technologies, design, and operation; holds a numbers of technology awards and named inventor on 6 international patents.



### Prof. Deborah Greaves, Professor of Ocean Engineering, University of Plymouth

Deborah Greaves is Head of the School of Engineering and of the School of Computing, Electronics and Mathematics, Professor of Ocean Engineering and Director of the COAST Laboratory at the University of Plymouth with previous appointments at Oxford, UCL and the University of Bath. Her research interests include marine and offshore renewable energy, and physical and numerical modelling of wave-structure interaction. She has led many national and international research projects concerning offshore renewable energy (ORE) in collaboration with industrial and academic partners and is Director of the EPSRC £9 million Supergen Offshore Renewable Energy (ORE) Hub. She recently published with Wiley an edited book on Wave and Tidal Energy (2018) and in the Queen's Birthday Honours List, 2018, she was awarded an OBE for services to Marine Renewable Energy, Equalities, and Higher Education.





**Prof. Atilla Incecik, Professor of Offshore Engineering, University of Strathclyde**

Prof. Atilla Incecik is Associate Principal, Executive Dean of Engineering and Professor of Offshore Engineering at the University of Strathclyde, Glasgow. Professor Incecik has been responsible for the development of design and analysis tools and model testing of marine and offshore engineering systems during his research activities both in industry and academia. His current research includes development of dynamic load and response prediction tools for ships, offshore platforms and marine renewable energy devices. Professor Incecik is Research Manager of Industrial Doctoral Centre for Offshore Renewable Energy (IDCORE) and an advisory professor at Shanghai Jiao Tong University, a visiting professor at Harbin Institute of Technology and Chair Professor at Zhejiang University. Professor Incecik is Editor-in-Chief of Ocean Engineering Journal.



**Ruhina Miller, Portfolio Manager, EPSRC, UK**

Ruhina Miller is a portfolio manager in The Engineering and Physical Sciences Research Council's (EPSRC) Energy team, responsible for the Marine Wave & Tidal, Wind Power, and Solar Technology research areas. She previously completed her PhD at Imperial College London which was sponsored by EPSRC and P&G, investigating the low temperature stability of surfactant-based products, from which 5 publications were produced. She also has experience in graduate research roles in the pharmaceutical and nuclear industries.



**Prof. Lars Johanning, Chair of Ocean Technology at the University of Exeter.**

Prof. Johanning received PhD from Imperial College of Science, Technology and Medicine at 2003. He has worked in University of Exeter College of Engineering, Mathematics and Physical Sciences since 2007. Now, he is the head of Offshore Renewable Energy.

He is a leading researcher with international recognition in the field of ocean energy and technology with a focus towards hydrodynamics and mooring systems. During his career, Prof Johanning has led multiple challenging research projects to a successful outcome and has developed the ORE group at Exeter to its current strength. His research outputs include over 170 peer reviewed book chapters, journal and conference papers dedicated to Offshore Renewable Energy and related topics including multi-disciplinary publications on resource characterisation and environmental studies. Professor Johanning is currently a Visiting Scholar at Dalian University of Technology, a selected Senator at the University of Exeter, Co-director of IDCORE, Project lead of EPSRC UK-China ORE project and is the programme Director on the Marine-i Hub project, a £6.8million European Regional Development Fund (ERDF) project as part of the Marine Hub Cornwall Enterprise Zone to stimulate and support business-led and market-driven R&D and innovation.



**Dr. Maurizio Collu, Reader in Offshore Renewable Energy, University of Strathclyde**

Dr Maurizio Collu is Reader in Offshore Renewable Energy Systems, and I joined the NAOME Department of the University of Strathclyde in August 2018. My area of expertise is applied mechanics, focusing in particular on multidisciplinary, coupled model of dynamics for offshore renewable energy systems. I apply this expertise to develop conceptual and preliminary design methodologies for offshore renewable energy systems.

He is currently the Principal Investigator of one of the five EPSRC Joint UK-China Offshore Renewable Energy flagship projects, the 3 years, £ 0.8m project INNO-MPP. With my research group, we are focusing on the development of multi-purpose offshore platforms for the sustainable development of small/isolated communities, exploiting the synergies among offshore renewable energy and aquaculture industries. He sits on several international committees, including the ITTC Specialist Committee on Hydrodynamic Modelling of Marine Renewable Energy Devices and the OMAE Ocean Renewable Energy technical committee.





**Prof. Thomas Adcock, Associate Professor, University of Oxford**

Tom Adcock is an Associate Professor at the University of Oxford and Official Fellow at St Peter's College. He completed his undergraduate and doctoral degrees in Oxford. After a short spell in industry he returned to Oxford as a post doc before taking up his current role in 2012. His work looks at how engineers understand the marine environment. His research looks at the ocean environment — at how we can use it to our advantage and how we can design against it. Particular interests are rogue waves, tidal energy, tsunamis and storm surges. My work on tidal power has featured in various national newspapers and has been discussed in the Scottish parliament. In 2015 I was interviewed about rogue waves on The Today Programme.



**Dr. Alasdair McDonald, Senior Lecturer, University of Strathclyde**

Dr Alasdair McDonald is a senior lecturer at the EPSRC Wind and Marine Energy Systems Centre for Doctoral Training based in the Wind Energy and Control Centre, Institute for Energy and Environment, Department of Electronic & Electrical Engineering, University of Strathclyde. His research interests are centred on electrical generators and their application to renewable energy, especially wind turbine powertrains. He studied Electrical and Mechanical Engineering at the University of Durham in 2004 and completed a PhD at the Institute of Energy Systems at the School of Engineering & Electronics at the University of Edinburgh in 2008. In 2009, he co-founded the spin-out company NGenTec to commercialise their research of a novel air-cored generator for wind. Dr McDonald was Chief Engineer at the company in 2010-2012, during which time the company designed, built and tested a 1MW demonstrator. Alasdair has worked as a consultant on the design of permanent magnet generators for direct-drive wind turbines.



**Dr. Georgios Deskos, Research Associate, Department of Aeronautics, Imperial College**

Dr Georgios Deskos is a research associate at the Faculty of Engineering, Department of Aeronautics, at Imperial College. He received his PhD in 2018 from Imperial College, implementing research in the 'numerical simulations of wind turbine wakes'. Prior this he studied at the Virginia Polytechnic Institute and State University, USA and the National Technical University of Athens (NTUA), Greece.



**James Battensby, Head of Research Business Development, ORE Catapult, UK**

James Battensby is the Head of Research Business Development at the Offshore Renewable Energy Catapult (ORE Catapult). James is responsible for the development of international research proposals and industrial supply chain engagement programmes at the ORE Catapult. James has over 18 years of experience in the low carbon sector and prior to joining ORE Catapult held a range of positions managing technology development projects. This has included roles with Parsons Brinckerhoff, UK Government and Corus Research and Development.



### **Claudio Bittencourt Ferreira, Business Development Director, DNV GL**

Claudio Bittencourt Ferreira, Business Development Director for DNV GL Renewables Certification Wave and Tidal, joined DNV in 1988. Graduated as structural engineer in 1984 and obtained MSc in Dynamic of Structures in 1990. Specialised in fixed and floating structures, marine operations, qualification of technology and responsible for Certification and Classification. He is responsible for the development of the risk-based certification process for the certification of wave and tidal energy converters (OSS-312) and project manager for EquiMar, SDWED and other ongoing certification projects of several wave and tidal energy converters. Participation on IEC TC-114 on Technical Specifications for the Marine Renewables Sector and IEC CAB WG15 regarding the development of the International Certification Scheme. Responsible for the development of the DNV GL Standard for Tidal Turbines (DNVGL-ST-0164) delivered in Oct 2015 and the Service Specification DNVGL-SE-0163 Certification of Tidal Turbine and Arrays (following the completion of ETI ReDAPT project). Participation in TiPTORS (the main seed for the a proposed reliability simulation tool), the ORE Catapult funded project on Reliability Simulation Tools performed in partnership with Ricardo. Also, participation in STTRiDE, DNV GL funded project, developing the simulation tool from the TiPTORS. Member of Strategic Advisory Board for H2020 DTOcean. Member of Advisory Group for H2020 WETFEET. Participation of TC-114 and the UK shadow committee PEL-114. Participation in EU H2020 project OPERA, ELEMENT, PivotBuoy and Innovate UK funded project Intelligent Mooring Systems.



### **Dr. Steve Allsop, Engineer, SIMEC Atlantis Energy**

Dr. Steve Allsop is a loads and modelling engineer for SIMEC Atlantis Energy within the Turbines and Engineering Services department in Bristol. He has a mechanical engineering background with over 7 years' industrial experience and an Engineering Doctorate in Offshore Renewable Energy. His EngD was in collaboration with EDF R&D, based at the French National Laboratory of Hydraulics and the Environment, and awarded by the University of Exeter in 2018. His thesis specialised in the numerical modelling of tidal stream turbines, developing tools for the hydrodynamic and structural analysis of blades. Following this, Steve completed a post doc in floating offshore wind with the Ecole des Ponts, ParisTech University assessing the dynamics of semi-submersible structures for multiple rotor, vertical axis turbines.



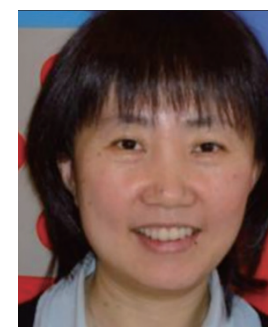
### **Dr. Timothy Stallard, Reader, School of Mechanical, Aerospace & Civil Engineering, University of Manchester**

Dr. Stallard joined the University of Manchester in October 2006 after two years of interdisciplinary research concerning the performance and economics of marine energy converters. This followed completion of a DPhil in the Ocean Engineering Dynamics group at Oxford University where he developed an interest in both vortex- and wave-induced forces. His present research concerns offshore renewables including tidal stream, wave energy and offshore wind. Ongoing research addresses the loading and response of tidal stream and wave devices to unsteady and extreme loads and interactions amongst arrays of devices.



### **Dr. Jack Paterson, Research Engineer, EDF Energy R&D UK Centre**

Jack is a Research Engineer at the EDF Energy R&D UK Centre. He has been with the team for four years, which began with a three-year IDCORE EngD project, focused on risk management in offshore wind construction. Jack was recently awarded his EngD and now leads the 'Maritime Construction and Operations' work package within EDF R&D. Throughout his research, Jack has built a strong understanding of maritime construction, inspection and O&M activities in both offshore wind and nuclear industries, closely following the state-of-the-art in vessels, autonomous systems, metocean, operations and improvements to safety. Jack has supported several operational projects such as the development of the Blyth Offshore Demonstrator wind farm and Hinkley Point C, including weather risk assessments, lessons learnt and condition monitoring activities.



### **Hong Yue, Senior Lecturer, Department of Electronic & Electrical Engineering, University of Strathclyde**

Hong Yue is a Senior Lecturer at the Industrial Control Centre, Department of Electronic & Electrical Engineering at the University of Strathclyde. She joined the University in 2007, having previously worked as a researcher at Manchester University and an associate professor at the Institute of Automation, Chinese Academy of Sciences. Her areas of expertise are control engineering and systems biology with particular focus on dynamic systems modelling, systems analysis and advanced controller design for complex systems and industrial processes. Dr. Yue is actively involved with national and international control research committees including IFAC Technical Committee on Chemical Process Control, IFAC Technical Committee on Biosystems and Bioprocesses. She's a regular referee for top international journals and a committee member for around 40 international conferences.





### **Gino Bawn, Principal Engineer, ITP Energised**

Gino is a Principal Engineer within the offshore renewable energy group at ITP Energised and has 10 years' experience in R&D, project management, engineering design, and project development services. Gino has extensive experience with a wide range of wet renewables covering tidal stream, tidal lagoons, floating offshore wind and wave energy projects. He has supported project developers, tech companies, local governments and investors across the globe. Prior to moving to the renewable energy industry in 2008, Gino worked in both the nuclear and gas industries.

Gino is a chartered engineer, a member of the Institution of Mechanical Engineers and holds an MSc in Renewable Energy from the University of Newcastle, for which he received a distinction. Gino also holds a BEng (hons) degree from the University of Edinburgh in Mechanical Engineering.



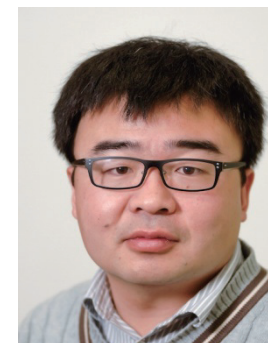
### **Dr. Ed Mackay, University of Exeter**

Dr Ed Mackay is a senior research fellow in the Offshore Renewable Energy Group, working on the design and modelling of floating offshore wind turbines. Prior to joining the University of Exeter, Ed worked in the wave and tidal energy industry for 12 years, most recently for Wave power Technologies, where he led the work on physical testing and numerical modelling of wave energy converters (WECs). He spent 6 years working for in the wave and tidal energy group at DNV GL (formerly Garrad Hassan), where he worked on the development of the WaveDyn and Wave Farmer software tools for modelling WECs and WEC arrays. During this time he worked on the numerical modelling and physical testing of over 20 WEC concepts. Ed completed his PhD whilst working for the technology developer Pelamis Wave Power, where he developed software tools for wave resource assessment, including a global database of satellite wave measurements.



### **Dr. Philipp Thies, Senior Lecturer, College of Engineering, Mathematics and Physical Sciences, University of Exeter**

Senior Lecturer in Renewable Energy (Offshore Reliability) at the College of Engineering, Mathematics and Physical Science at the University of Exeter has been involved in research on reliability engineering for offshore renewable energy systems since 2008. His main research focus is towards analytical system reliability assessment numerical and physical reliability component testing. He is Co-director of ORE Supergen, is contributing to the EPSRC UKCMER consortium, the IDCORE doctoral training, as well as the EU FP7 Marinet 1 and the EU H2020 OPERA and Marinet 2 projects. Much of his reliability work is in close collaboration with industry, including component testing and load analysis for mooring systems, power cables, marine operations and design optimisation approaches.



### **Prof. Xiaowei Zhao, Professor of Control Engineering, University of Warwick**

He obtained his PhD in Control Theory from Imperial College London in 2010 and then worked as a postdoctoral researcher in the Control Engineering Group of the University of Oxford until 2013. After that he joined the University of Warwick where he was awarded a chair in 2018. At Warwick he has independently built a research group which is expanding to be 20 PhD students and postdoctoral researchers. His main research areas are control theory with applications on offshore renewable energy, local smart energy and solar-powered unmanned aerial vehicles. Currently he has seven renewable-energy research projects – four from EPSRC, two from H2020 and one from industry with a share of £3.5 million out of a total value of £20.5 million. For example, He is a co-director of the EPSRC Supergen ORE (Offshore Renewable Energy) Hub. He is the coordinator (principal investigator) of a just-awarded €4.3million H2020 project “WinGrid: Wind farm-grid interactions: exploration and development”, which includes 7 universities and 9 companies (ABB, Vestas, DNV GL etc.) across six countries. WinGrid aims to investigate future power system integration issues associated with large-scale deployment of wind generation.

## Short Biography of Speaker/Chair(China)



### **PENG Wei, General Deputy Director, National Ocean Technology Centre, Ministry of Natural Resources**

He received the master degree of management from Nankai University in 2007 and served as general deputy director of National Ocean Technology Centre(NOTC) from 2017. As the professorship research fellow of NOTC, he has been involved and lead more than 30 national and provincial level research projects with the funding from National 863 Research Program, National Key Research and Development Program, National Major Program in Marine Sector, National Marine Infrastructure System Program, National 908 Special Program and National Marine Renewable Energy Fund Program. He has published a number of papers in the national and international peer journals and the special publications in the marine research and management. He has focused on the marine hazard prevention and mitigation, marine spatial plan, marine renewable energy and marine islands management for years and act as the Chinese national representative of IEA OES-TCP, and the member of Marine & Ocean Observation Branch of China Ocean Society, Marine Renewable Energy Branch of China Ocean Engineering Consulting Association and Meteorological, Hydrological and Ocean Instruments Branch of China Instruments and Instruments Society. He is also the editorial director of the Journal of Ocean Technology.

### **Prof. SHI Hongda, Deputy Director of Shandong Provincial Key Laboratory, Ocean University of China**

He has focused on theoretical, numerical and experimental research of wave energy converter for many years, including hydrodynamic analysis, array deployment, hydraulic system research etc. He and his team have developed several new wave energy converters, for example, Combined Oscillating Buoy Wave Energy Converter, Circular Ramp Overtopping Wave Energy Converter, the caisson breakwater OWC and Multi-freedom Floater Wave Energy Converter. He also devotes to the integrated energy development of various marine energy converters. In recent years he has worked on the construction of the comprehensive marine energy offshore test site. He has been in charge of 54 research projects, including the projects supported by National Key R&D Program of China, National High Technology Research and Development Program (863), National Natural Science Foundation, the International S&T Cooperation Program etc. He has published over 140 papers and 6 books, applied for 44 patents and 5 software copyrights.



### **LU Zhongmin, Vice President and Chief General Engineer, Shanghai investigation, Design and Research Institute, China Three Gorges Corporation**

He has long been engaged in consulting work on the design of water, hydropower and wind farm projects. He has been the chief engineer of major projects in Shanghai and the world's largest freshwater reservoir for saltwater shelter and storage in estuarine beach-Qingcaosha Reservoir and water intake and delivery pump gate projects. He has led the design and consulting work of the first offshore wind farm in Asia-Donghai Bridge offshore wind farm.

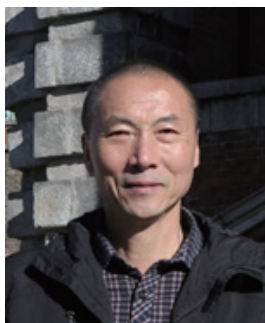
He has won one second-class award of Dayu Water Conservancy Science and Technology and one second-class award of China Water Transportation Construction Science and Technology. He has won many first-class awards of excellent engineering design, excellent engineering consulting achievements and silver awards at the national and provincial and ministerial levels. One invention patent and five utility model patents were granted. He has published many papers in core journals, China Academy of Engineering Science and Technology Forum and Asia-Pacific Offshore Mechanics Conference.

### **Dr. LI Wencong, Director of the Division of European Affairs, Bureau of International Cooperation, NSFC**

She received PhD from the School of Economics and Management, University of Chinese Academy of Sciences and Master's degree from Beijing Foreign Studies University. Her research interest is science policy and international scientific cooperation.







**Prof. YOU Yage, Guangzhou Institute of Energy Conversion (GIEC), Chinese Academy of Sciences**

He has engaged in research of wave energy utilization since 1988. He has hosted over 40 research projects, and has developed 4 onshore Oscillating Water Column (OWC) Wave Energy Converters (WECs), 1 onshore Oscillating Buoy (OB) WEC, 4 solo Duck WECs, and 1 solo Eagle WEC; also, he has undertaken 2 sets Wave, Wind and PV Stand Alone Power Stations for islands.

As in the above researches, he has developed algorithms for the diffraction and radiation potentials in near-shore zone, and has solved the problems of multi-bodies constrained by slides or/and joints for hydrodynamic analysis. Based on these works he has started to optimize a few floating WECs including for solo Duck by Parameters Optimization (PO), and soon he has realized that optimization of WEC is a functional problem, not a parametric one. In 2012, he has developed no-scattering solutions for sliding-body and hinged body. All the optimized bodies is like the beak of an eagle and then, the WEC been named Eagle. If the mass of the floater is ignored, the Capture-Width-Ratio (CWR) of terminative WEC in regular wave of the period will be 100%. Model test shows that, even the floater has mass, Eagle has high CWR near the designed period and quite a large range near as well.



**Prof. GENG Jing, Vice Dean of the College of Shipbuilding Engineering, Harbin Engineering University.**

Her main research areas are the design theory and construction technology in hydraulic engineering, and the key technologies in marine renewable energy. She has coordinated more than 40 research projects, including National Marine Renewable Energy Special Found Project, Information Construction Project from the Ministry of Transportation, Construction Project of Heilongjiang Department of Water Resources and Transportation, the planning, research and design of harbors, ports and waterways in China-Russia and China-North Korea boundary rivers and lakes. At present, she is the vice chairman of Heilongjiang Water Conservancy Society, an expert of Water Transportation Engineering and Transportation Supporting System of the Ministry of Communication and Transportation, and a member of National Science and Technology brain trust of the Ministry of Science and Technology.



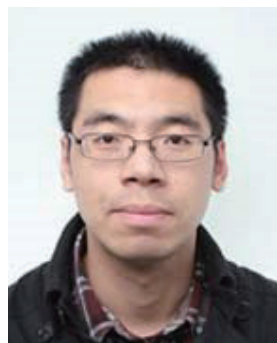
**Dr. SUN Ke, Associate Professor, College of Shipbuilding Engineering, Harbin Engineering University**

She has been in charge of and participated in 20 major research programs including national science foundation of China, 863 plan and national science and technology support program from Ministry of Science and Technology of China etc. She has published 40 papers on fluid dynamics, ocean renewable energy and ocean engineering. Besides, she was granted 5 rewards, 4 invention patents and 3 software copyrights. Dr. Sun is interested in the numerical and experimental investigation of tidal current and wind turbines' load, power and flow field characters around single turbine, duct and turbine array. She developed her research in numerical investigation of Bio-fluid Mechanics when she worked at University of Strathclyde. Her recent research interests are numerical simulations and modeling of ocean renewable energy platform integrated of tidal current, wave and offshore wind energy devices.



**Wang Xiaoyong, Director of Marine Engineering Survey Centre, National Ocean Technology Centre, Ministry of Natural Resources.**

He has been engaged in the assessment and selection of marine renewable energy resources for a long time. He has organized and carried out the investigation, assessment and selection of marine energy resources in key offshore areas, major islands and the design of power stations in China. In recent years, he has organized and compiled marine renewable energy resources. There are nearly 20 national standards/industry standards/technical regulations for raw energy, 3 provincial and ministerial awards for related achievements, more than 50 scientific and technological papers and 6 monographs.



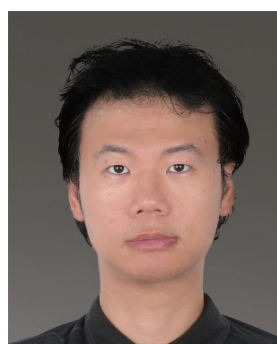
**Dr. WU He, Associate Research Fellow, Marine Engineering Survey Centre, National Ocean Technology Centre, Ministry of Natural Resources**

He specialises in wave and tidal resource characterization, assessment with particular expertise in applying 3D current models to understand dynamic effects by deployment of tidal turbines. He was PI of more than 20 funds including Special Fund of MRE in China, National Science and Technology Support Program over RMB 8 M totally. He has published 4 books and 5 standards as co-author and he is author of over 30 peer-reviewed journal papers and on assessment of MRE. He has been rewarded 2 times by China Association of Oceanic Engineering and Chinese Society of Oceanography due to fruitful achievements such as high-resolution spatial and temporal characteristics of marine renewable energy, the Service System of Marine Renewable Energy, Atlas of Marine Renewable energy in China.



**Prof. SUN Liang, School of Transportation, Wuhan University of Technology**

He got his PhD degree in Port, Coastal and Offshore Engineering from Dalian University of Technology in 2009. He had been working at University of Oxford, National University of Singapore and University of Bath from 2006 to 2016. He joined the School of Transportation at Wuhan University of Technology in 2017. He is interested in the research on wave-structure interactions, including wave run-up around offshore structures, nonlinear wave loads on structures and motion responses of floating structures. His recent work has been focusing on the development and utilization of wave energy.



**Prof. LI Ye, School of Naval Architecture, Ocean and Civil Engineering, Shanghai JiaoTong University**

He is internationally recognized for his expertise in offshore technology and for his extensive works in theoretical, numerical and experimental studies on marine hydrodynamics. He has been an associate editor of ASME Journal of Offshore Mechanics and Arctic Engineering, Renewable Energy, Renewable Energy and Sustainable Energy Review, American Institution of Physics(AIP) Journal of Renewable and Sustainable Energy.



**YUAN Ling, Deputy General Manager, Guodian United Power Technology Company LTD, China Energy**

She has been researching and developing on equipment and technology for power generation using new energy and responsible for projects supported by the National Marine Renewable Energy Resource Special Fund. Many technological difficulties has been surmounted including development on new material, design of large-scale ocean energy generation equipment, fabrication of ocean energy hydraulic blade, control of ocean energy turbine, installation of ocean energy turbine on sea site and so on. She was the first person to lead the research and development of the 300kW tidal current energy turbine built in China which possessed the glorious title of the longest connection time to the grid and the maximum capacity of single turbine, and the first to put the 270° electric pitching control and submarine video monitor technologies in to use for the turbine. The research results won the first prize of Marine Science and Technology Award and can promote the technological progress of tidal current energy generation in China.



**Prof. LI Wei, Vice Dean of the Institute of Oceanography, Zhejiang University**

Over the past two decades, Prof.Li have persisted in the research of ocean current power generation, wind power and hydropower. Prof. Li is the chairman of the Ocean Energy Professional Committee of the Chinese Renewable Energy Society, and a vice chairman of the Science and Technology Committee of Zhejiang Wind Power Association.





**Prof. Richard Zhu, Professor of Offshore Engineering, Zhejiang University.**

Richard Zhu currently serves as Professor in Zhejiang University, focusing on the study and research of Offshore wind engineering, including structures, soil mechanics, fluid dynamics, data analysis and computational software.

Before working for the university, Richard has worked for wind and offshore engineering enterprises for over 10 years in United States, Europe and China.

Richard Zhu got his bachelor's and Master's from Dalian University of Technology, majored in Civil Engineering and Structural Engineering and Doctor's Degree of Engineering from United States.



**Prof. WU Feng, Dean of the College of Energy and Electrical Engineering, Hehai University**

Prof. Wu's research interest is the modeling and control of power systems and the renewable energy generation systems. He has made significant achievements in the modelling and optimal control of the wind and wave energy conversion systems. He has published more than 40 papers in the international journals and conferences, including 5 papers in IEEE Transactions. He is the principle investigator or the major participant of 6 national and provincial research projects including the National Natural Science Foundation of China, National High-tech R&D Program of China (863 Program), National Program on Key Basic Research Project of China (973 Program), the Key Fund Project of Jiangsu Province etc.

**Dr. HU Yinlong, Associate Professor, College of Energy and Electrical Engineering, Hehai University**

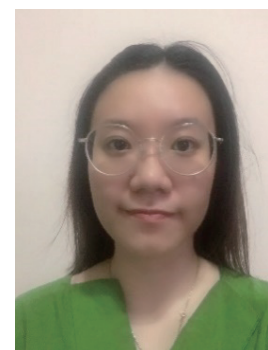
His research interest is the analysis and synthesis of passive and semi-active mechanical systems, and the modelling and control of the renewable energy generation systems. His main academic contributions include the natural frequency assignment of inerter-based mechanical systems, semi-active inerter and its physical realizations, and inerter-based passive structural control for offshore wind turbines.

Dr. Hu was served as the principle investigator and the major participants for several research projects including the National Natural Science Foundation of China, and Natural Science Foundation of Jiangsu Province, National Key R&D Program of China, etc.



**LIN Yifeng, Deputy General Engineer, Shanghai investigation, Design and Research Institute, China Three Gorges Corporation**

As a technical director, he has completed the survey and design of Shanghai Donghai Bridge 100MW offshore demonstration project which is the first offshore wind farm in Asia, phase II project of Donghai Bridge offshore wind farm, phase II project of Shanghai Lingang offshore wind farm and other offshore wind farms. He has also hosted and participated in a number of offshore wind energy and marine energy research projects at or above the ministerial level. He has participated in the compilation of two national technical standards for wind farms and published 15 papers and 7 patents. He was awarded the second prize of national scientific and technological progress, the first prize of Shanghai scientific and technological progress and the first prize of China's electric power scientific and technological progress.



**Dr. LIN Lin, Associate Research Fellow, Shanghai investigation, Design and Research Institute, China Three Gorges Corporation**

Her research area is offshore wind energy and marine renewable energy. As a technical director, she is responsible for the design and integrated analysis of two floating offshore wind energy demonstration projects in Guangdong and Shanghai. Moreover, She has hosted and participated other projects related to marine development, for example developing floating lidar and cage culture. She published 6 papers, including 2 SCI papers.



**Dr. SHI Wei, Associate Professor, Dalian University of Technology**

His research interests include numerical modelling of both fixed-bottom and floating offshore wind turbine, wind turbine drive train dynamics, ice-structure interaction for offshore wind turbine. Meanwhile he has a good experience in dynamic analysis of mechanical system. He is serving as an international advisory committee in Asia-Pacific Forum on Renewable Energy 2017.

## Chair/Co-Chair



### Prof. NING Dezhi, Professor of Coastal and Ocean Engineering, Dalian University of Technology

He is the Principal Investigator for five major projects sponsored by the National Science Foundation of China (NSFC), and he is supported by the highly-competitive Excellent Young Scientist programme in China. He also leads a Royal Academy of Engineering Project under Newton Fund for the integration of WECs and floating breakwaters. He has published over 180 peer-reviewed journal/conference papers, and chaired several international conferences on marine renewable energies.



### Prof. ZHANG Dahai, Deputy Director of the Institute of Ocean Engineering and Technology, Ocean College, Zhejiang University

Professor Zhang is the Deputy Secretary-General of Division of Ocean Technology System, Chinese Society of Oceanography, AWTEC (Asian Wave and Tidal Energy Conference Series) Organizing Committee Member, Committee Member in Ocean Special Policy Study (Ocean SPS) of Renewable Energy Systems, China Council for International Cooperation on Environment and Development(CCICED), Deputy Director of the Institute of Ocean Engineering and Technology at Ocean College, Zhejiang University.

He has worked with various research projects dealing with modelling, design and measurements of offshore renewable energy equipment such as wave energy converter, tidal current turbine and offshore wind turbine. He has published over 50 peer-reviewed journal/conference papers in proposed areas.



### Prof. ZHANG Yongliang, Tsinghua University

He have been engaged in research and development of marine wave energy converters and hydrodynamic research of marine structures for a long time. I have hosted and participated in a series of major national projects, including Chinese National Programs for Fundamental Research and Development (973 Program), National High Technology Research and Development Program (863 Program), the National Natural Science Foundation of China, The New Century Excellent Talent Support Program of the Ministry of Education etc. 16 national invention patents 16 have been authorized and more than 200 papers and five books have been published.

## 住宿酒店信息 Accommodation Information

### 青岛府新大厦：(会议酒店)

地址：青岛市闽江路5号

电话：0532 85913688

网址：<http://www.fuxinhotel.com/en/>

QINGDAO FUXIN HOTEL(Conference Hotel)

Address: No.5 Minjiang Road, Shinan District, Qingdao, China

Phone Number: 86 0532 85913688

Website: <http://www.fuxinhotel.com/en/>



### 青岛中铁威斯汀酒店

地址：市南区香港中路8号

(距离府新大厦约730m, 步行约10分钟)

电话：400-699-8818

网址：<http://en.westinqd.cn/>

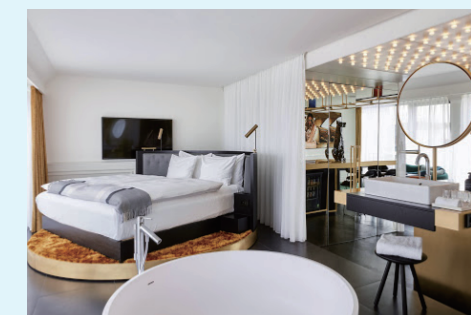
THE WESTINQINGDAO HOTEL

Address: No.8 HongKong Middle Road, Shinan District, Qingdao

(Distance to Fuxin Hotel: 730m, Walking Time: 10minutes)

Phone Number:400-699-8818

Website: <http://en.westinqd.cn/>



### 青岛贵都国际大饭店(青岛机场富华酒店紧邻)

地址：市南区香港中路28号

(距离府新大厦约650m, 步行约9分钟)

电话：86 0532 86681688

网址：[www.equatorialinternational.com](http://www.equatorialinternational.com)

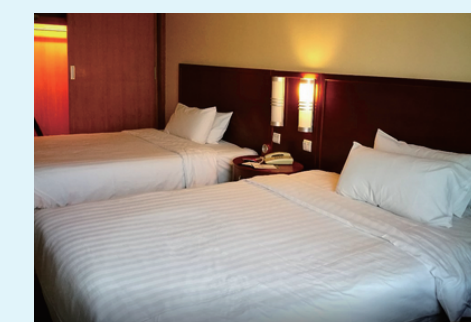
HOTEL EQUATORIAL QINGDAO(close to Airport FuHua Hotel )

Address: No.28 HongKong MiddleRoad, Shinan District, Qingdao

(Distance to Fuxin Hotel: 650m, Walking Time: 9minutes)

Phone Number:86 532 86681688

Website: [www.equatorialinternational.com](http://www.equatorialinternational.com)





The background of the image is a deep blue gradient. In the upper half, there is a faint, stylized world map composed of a grid of small dots. The lower half of the image features a complex, low-poly geometric pattern made of various shades of blue triangles and polygons, creating a sense of depth and movement.

# 合作创新 共同发展

Cooperative Innovation & Common Development