2020 Australia-China Science and Research Fund Joint Research Centres (ACSRF-JRC)

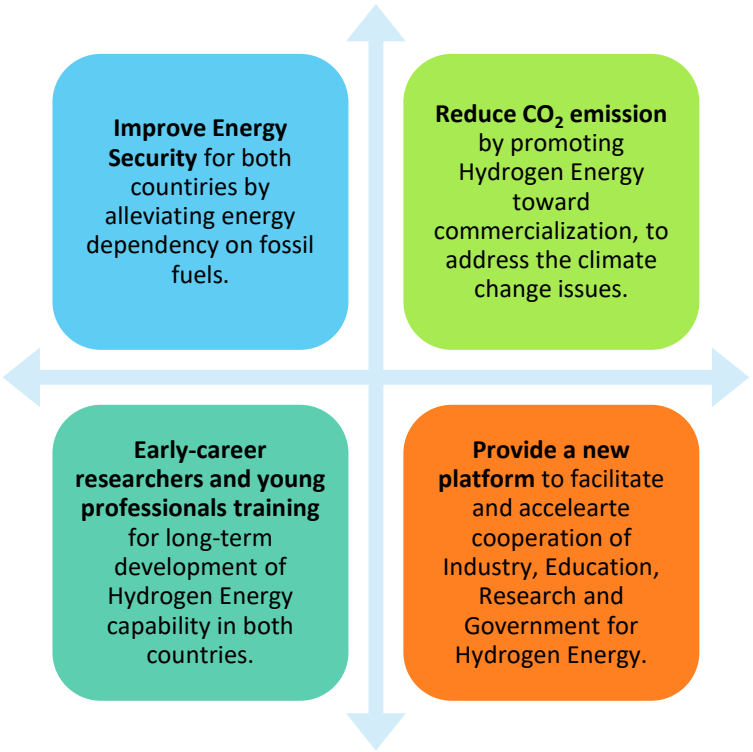
Australia-China Joint Research Centre for Hydrogen Energy (JRC-HE)

PROSPECTUS

JRC-HE Description:

This **Joint Research Centre for Hydrogen Energy** (JRC-HE) will provide both Australia and China with new knowledge, technology and economic capacities to address national priorities for renewable hydrogen energy and CO_2 emissions reduction. The centre aims to address critical problems for the **commercialisation of a Hydrogen Energy** for both countries, ranging from hydrogen production and scaling up, to the end-use of hydrogen and associated Techno-Economic Analysis. Research programs hosted by the proposed JRC-HE includes fundamental material development and mechanistic investigation in several innovative hydrogen production technologies, including electrocatalytic water splitting, photocatalytic water splitting, and steam reforming; packaged equipment technology for scaling up of hydrogen production, and system integration demonstration for hydrogen end-users.

JRC-HE Goals:



JRC-HE Key industry relevant deliverables:

- Near commercial cost-effective catalyst materials for H_2 production;
- Shovel-ready reactor design and optimization for H_2 production from renewable energies;
- Techno-Economic Analysis of Hydrogen Energy value chain;
- A national and international collaboration platform for Hydrogen Energy.

JRC-HE Research Themes/Programs Structure:

Theme 1: Catalyst desing for hydrogen production	•H_2 production via electrocatalytic water splitting •H_2 production via photo(electro)catalytic water splitting •H_2 production via steam reforming
Theme 2: Material and reactor scale-up	•Catalyst production scale up •Electrode preparation scale up •Reaction design and optimization
Theme 3: Hydrogen end-use utilization technologies	•Green ammonia production •Onsite hydrogen refuelling station •Methane enrichment transport •Waste oil re-fining
Theme 4: Transformation of technologies	•Roadmaps and planning for future hydrogen industry •Integrating hydrogen energy value •Consultancy on markets and policy

JRC-HE Partners (current):

- Lead Australian Partner: The University of Adelaide (Shizhang Qiao – bid leader, David Lewis, Volker Hessel, Greg Metha, Yan Jiao)
- Lead Chinese Partner: Tianjin University (Naiqin Zhao – bid leader, Jinlong Gong)

Other Partners (the list is growing):

- The University of New South Wales (Liming Dai)
- Beijing University of Chemical Technology (Jianfeng Chen)
- Foshan CleanEst Energy Technology Co., Ltd
- Xiongchuan Hydrogen Energy Technology Co., Ltd

THE UNIVERSITY of ADELAIDE

UNSW AUSTRALIA

佛山市清极能源科技有限公司
Foshan CleanEst Energy Technology Co., Ltd

JRC-HE Industry participation benefits:

At current stage (before end of July), simply let us know if you are **interested or not**, and provide feedback to the proposed idea, if any.

At a later stage, providing a **supporting letter** stating that the research outcomes from JRC-HE can be applied to your business. We can help you to finalise this letter. You can also nominate **in-kind or cash contribution** for this JRC-HE. You will receive the following benefits for the contribution you made.

- Be a representative on Centre Industry Advisory Board committees.
- Collaboration with university and access to leading academics in the research area.
- Access the national and international collaboration platform for Hydrogen Energy.
- High priority in access program generated IP.
- Sample providing and testing.

JRC funding scheme and application process:

Australia-China Joint Research Centres (JRCs) are virtual centres funded by Australia-China Science and Research Fund (ACSRF), supported by Department of Industry, Science, Energy and Resources. The main aim of this scheme is to link Australian and Chinese research institutions conducting research-related activities. The fund provides grants of up to AUD 1 million from Australian Government, and RMB 5-6 million from Chinese Government. The maximum grant period is 3 years. There were 3 rounds of application, with 6 JCRs supported for each round. Now the 4th round is open, and will close on 2nd September 2020. The funding guideline, including priority areas for this round, can be found here.

Australian partners and Chinese partners will need to submit proposals with the same research programs to corresponding government. Each government assesses applications independently in accordance with its own processes and decides which projects to refer for joint consideration. Our Chinese partner has submitted their application to The Chinese Ministry of Science and Technology (MOST) on 15th June 2020.

Contacts:

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