Preface

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Editor, Proceedings of The Fifth International Conference on New Material and Chemical Industry (NMCI 2020)

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The Fifth International Conference on New Material and Chemical Industry (NMCI 2020) was planned to be held on November 14-16, 2020 in Xiamen, China. Due to the COVID-19 epidemic and to avoid the risk of crowd gathering, the organizing committee decided to hold NMCI 2020 virtually/online on November 14-16, 2020. Although held online, this year’s conference also attracted many scholars and experts in the field of New Material and Chemical Industry to share new research results, novel policy developments, and practical implementation experiences. NMCI2020 was a successful, fruitful online academic event. Nearly 30 participants from 3 different countries and regions attended the online meeting.

The conference consists of three parts: keynote presentations, oral presentations and poster presentations and discussions covering a wide range of subjects from New non-ferrous metal alloy, Nano materials and technology, New building materials, New chemical material, Organic chemical industry to Chemical engineering. We are very grateful that Professor Shixuan Xin from Petro China Company Limited, China presided over the conference. Thanks for all participants’ attending and sharing!

It is our great honor to invite 5 experts to give the outstanding keynote speeches: Prof. Laichang Zhang, from School of Engineering Edith Cowan University; Prof. Zhenyu Tian, from Chinese Academy of Sciences; Prof. Donatella Giuranno, from National Research Council of Italy, Prof. Xin Jin, from China University of Petroleum, China and Dr. Jie Wei from University of Electronic Science and Technology of China.

After keynote presentations, there were 3 orals presentations and 4 poster presentations. Oral speakers and poster presenters shared their latest research results with the audience, the audience actively and enthusiastically participated in by asking questions and voting.

This conference proceeding included 18 accepted articles selected from 45 submissions.

We would like to express our gratitude to the reviewers of these manuscripts, who provided their time and expertise to review papers and facilitate the smooth running of NMCI. We are extremely grateful for technical program committee and editors and extend our most sincere thanks to all the authors for their excellent contribution and work and participants for their active attending. Our sincere thanks also go to the IOP Publishing editors and managers for their helpful cooperation during the preparation of the proceeding.

On behalf of the Organizing Committee of NMCI 2020
Technical Program Committee

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**Conference Co-chair**
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Conference Overview

Due to COVID-19 epidemic, The Fifth International Conference on New Material and Chemical Industry (NMCI 2020) was held online on November 14-16, 2020. The conference aims to provide the best platform for researchers and scholars worldwide to discuss recent researches and developments in the area of New Material and Chemical Industry.

Below is the overview of NMCI2020 online conference.

Nearly 30 participants from 3 different countries and regions attended the online meeting. The conference consists of three parts: keynote presentations, oral presentations and poster presentations. Professor Shixuan Xin from Petro China Company Limited, China, presided over the conference.

There are 5 keynote speeches delivered in this conference.

![Figure 1. Keynote Presentation Video from Prof. Laichang Zhang.](image1)

![Figure 2. Keynote Presentation from Prof. Zhenyu Tian.](image2)
Prof. Laichang Zhang, from School of Engineering Edith Cowan University, firstly made the presentation on “Mechanical behavior of 3D printed titanium alloy porous scaffolds” (Figure 1).

The second speech was delivered by Prof. Zhenyu Tian, from Chinese Academy of Sciences. The theme of the speech is “Facile synthesis of transition metal oxides for clean combustion of VOCs” (Figure 2).

Prof. Donatella Giuranno, from National Research Council of Italy gave a wonderful speech on “Tailored light-weighting composites by Si-Ti-C system: Experimental and theoretical considerations” (Figure 3).

Prof. Xin Jin, from China University of Petroleum, China gave a presentation on “Catalytic conversion of sugars to dicarboxylic acids over bimetallic catalysts” (Figure 4).

As the last keynote speaker, Dr. Jie Wei, from University of Electronic Science and Technology of China gave a presentation on “Novel Power Rectifiers and Fabrication Based on GaN Material” (Figure 5).

After keynote presentations, there are 3 oral presentations (Figure 6) and 4 poster presentations (Figure 7). Oral speakers and poster presenters shared their latest research results with the audience, the audience actively and enthusiastically participated in by asking questions and online voting.
The conference was a complete success, thanks to the support of the participants, especially the host, keynote speakers and oral speakers. We are expecting more and more experts and scholars from around the world to join this international conference next year.