

**2023 International Conference on Surface Science Technology and Application  
(ICSSTA 2023)  
Conference Notice**

**Chongqing, China June 16-June 19, 2023**

**Conference Theme:** Focusing on new technologies in the field of surface science and promoting deeply integrated global development

Surface Science and Technology, as an interdisciplinary and comprehensive technology, mainly focuses on the study of various phenomena and processes occurring on the surface and interface at the atomic or molecular level. It has involved many basic and applied disciplines, including physics, chemistry, mathematics, material science, biology and engineering, and is one of the most active frontier disciplines in the world at present. It has now laid the foundation of technology development in modern industry.

To further solve the scientific problems related to surface and interface and promote the widely application of surface technology so as to serve for social development and breakthroughs, scientist at home and abroad make every efforts to be innovate constantly, and have obtained great and remarkable achievements.

Therefore, Southwest Institute of Technology and Engineering, Beijing University of Technology, Chongqing Research Institute of HIT, Zhengzhou University and some other domestic institutions, colleges and universities organize 2023 International Conference on Surface Science Technology and Application (ICSSTA 2023), which will be held in Chongqing, China on 16<sup>th</sup> - 19<sup>th</sup> of June with the theme of *Focusing on new technologies in the field of surface science and promoting deeply integrated global development*. Academicians from the Chinese Academy of Engineering, Chinese Academy of Sciences and the European Academy of Sciences as well as well-known experts and scholars at home and abroad will give keynote presentations, and scholars and industry leaders at home and abroad will be invited to have extensive and in-depth exchanges and discussions on the latest research results and industry trends in the field of surface science and technology, so as to promote the high-quality development of surface science and technology. We cordially welcome relevant workers at home and abroad to participate in the conference and submit articles.

Southwest Institute of Technology and Engineering  
China South Industries Group Co., Ltd.  
December 2, 2022

## Conference Organizers

### 1. Co organizer (in random order):

Southwest Technology and Engineering Research Institute  
Beijing University of Technology  
Chongqing Research Institute of Harbin Institute of Technology  
Zhengzhou University  
Air Force Engineering University  
Tianjin University of Technology and Education  
Southwest University of Science and Technology  
Shaanxi University of Science & Technology  
Southwest Jiaotong University  
Anhui University of Technology  
Shenyang University of Technology  
Southwest Petroleum University  
Chongqing University of Science and Technology  
Lanzhou Institute of Chemical Physics  
Luoyang Ship Material Research Institute  
Lanzhou Institute of Physics, CAST  
AVIC Manufacturing Technology Institute  
National Engineering Research Center for Magnesium Alloys  
State Centre for International Cooperation on Designer Low-Carbon & Environmental Materials  
Engineering Research Center of Oilfield Chemistry, Ministry of Education  
Science and Technology on Plasma Dynamics Laboratory  
Key Laboratory of Green Fabrication and Surface Technology of Advanced Metal Materials, Ministry of Education  
Liaoning Key Laboratory of Advanced Welding Technology and Automation  
Oil & Gas Field Applied Chemistry Key Laboratory of Sichuan Province  
Chongqing Society for Corrosion and Protection  
Chongqing Society of Surface Engineering Technology  
Chongqing Hongzhixin Information Technology Co., Ltd

### 2. Support media:

*Journal of Magnesium and Alloys* (SCI)

*Surface Technology* (EI)

*Equipment Environment Engineering*

### 3. Advisers (surnames arranged in alphabetical order):

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Yu-kui GAO, Professor of Tongji University  
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Zheng-hao GE, Professor of Shaanxi University of Science & Technology  
Shui-li GONG, Researcher of AVIC Manufacturing Technology Institute  
Tai-jiang GUI, Professorate Senior Engineer of Marine Chemical Research Institute  
Feng GUO, Professor of Inner Mongolia University of Technology  
Hong-bo GUO, Professor of Beihang University  
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Ge ZHOU, Associate Professor of Shenyang University of Technology

Liu-cheng ZHOU, Associate Professor of Air Force Engineering University

Xiao-jiao ZUO, Associate Professor of Shenyang University of Technology

## Theme Forum

### Forum I. Advanced Laser Surface Processing and Manufacturing

#### Presidents:

Ting HUANG, Professor, Beijing University of Technology

Ying-chun GUAN, Professor, Beihang University

Qun-li ZHANG, Professor, Zhejiang University of Technology

#### Conveners:

Rong-shi XIAO, Professor, Beijing University of Technology

Ting HUANG, Professor, Beijing University of Technology

#### Host:

Beijing University of Technology

#### Topics:

- 1) Laser surface strengthening
- 2) Laser cleaning and polishing
- 3) Laser material deposition
- 4) Laser manufacturing on functional surface
- 5) Laser composite manufacturing on surface
- 6) Other techniques related to laser manufacturing
- 7) Mechanism on the interaction between laser and materials

### Forum II. Special Functional Coatings and Technology

#### President:

Xiao-hong WU, Professor, Harbin Institute of Technology

#### Convener:

Song-tao LU, Professor, Harbin Institute of Technology

#### Host:

Chongqing Research Institute of HIT

#### Topics:

- 1) Thermal control coating and technology
- 2) Radiation-resistant coating and technology
- 3) Atomic oxygen protective coating and technology
- 4) High-temperature insulation coating and technology
- 5) Stealth coating and technology
- 6) Other special functional coatings and technologies

### Forum III. Advanced Thermal Spray Process and its Application in Engineering

#### Presidents:

Tong-zhou CHEN, Researcher, Wuhan Research Institute of Materials Protection  
Tian-ying XIONG, Researcher, Institute of Metal Research, Chinese Academy of Sciences

**Conveners:**

Guan-jun YANG, Professor, Xi'an Jiaotong University  
Shi-hong ZHANG, Professor, Anhui University of Technology  
Nan-nan ZHANG, Professor, Shenyang University of Technology

**Hosts:**

Anhui University of Technology  
Shenyang University of Technology  
Key Laboratory of Green Fabrication and Surface Technology of Advanced Metal Materials,  
Ministry of Education  
Key Laboratory of Advanced Welding Technology and Automation of Liaoning Province

**Topics:**

- 1) Design and manufacturing of advanced ceramic coating
- 2) Process and application of metal ceramic composite coating
- 3) Design and manufacturing of new alloy coating
- 4) Manufacturing of composite functional coating and advanced applications

**Forum IV: Precision and Ultra-precision Machining of Surface**

**President:**

Bing YAN, Professor, Tianjin University of Technology and Education

**Conveners:**

Hou-jun QI, Professor, Tianjin University of Technology and Education  
Tie-gang WANG, Professor, Tianjin University of Technology and Education

**Host:**

Tianjin University of Technology and Education

**Topics:**

- 1) Precision machining and blade tools
- 2) Ultra precision grinding and equipment
- 3) Surface integrity and measurement
- 4) Precision ultrasonic-assisted machining and equipment
- 5) Precision surface finish machining
- 6) Grinding and polishing and relevant techniques

**Forum V: Functional Surface Structure of Biomaterials and Biomimetic Materials and its Design**

**President:**

Jia-xin YU, Professor, Southwest University of Science and Technology

**Conveners:**

Guo-qiang LI, Professor, Southwest University of Science and Technology  
Mo-yuan CAO, Professor, Nankai University

**Host:**

Southwest University of Science and Technology

**Topics:**

- 1) Biological surface behavior
- 2) Characterization of biological surface materials
- 3) Design of biomimetic surface materials
- 4) Biomimetic surface engineering
- 5) Surfaces and interfaces

## **Forum VI: Corrosion and Surface Engineering of Metal Materials in Energy and Power System**

### **Presidents:**

Jun-lei TANG, Professor, Southwest Petroleum University

Liang WU, Associate Professor, Chongqing University

### **Conveners:**

Lei CHEN, Researcher, Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences

Xiao-qiang FAN, Professor, Southwest Jiaotong University

Xiao-peng LU, Associate Professor, Northeastern University

Zhi-hui XIE, Professor, China West Normal University

Xian-kang ZHONG, Professor, Southwest Petroleum University

### **Hosts:**

Southwest Petroleum University

National Engineering Research Center for Magnesium Alloys

Engineering Research Center of Oilfield Chemistry, Ministry of Education

Oil & Gas Field Applied Chemistry Key Laboratory of Sichuan Province

### **Topics:**

- 1) Surface protection under extreme serve conditions in oil & gas field
- 2) Surface engineering of metal material used in new energy and its deterioration mechanism
- 3) Corrosion mechanism of metal material used in hydrogen energy and its surface protection
- 4) Surface engineering of light metal materials

## **Forum VII: Friction, wear and lubrication of surface and interface**

### **Presidents:**

Jian-min CHEN, Researcher, Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences

Jun-hong JIA, Professor, Shaanxi University of Science & Technology

Hong-xuan LI, Researcher, Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences

### **Conveners:**

Jun-hong JIA, Professor, Shaanxi University of Science & Technology

Li JI, Researcher, Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences

### **Hosts:**

Shaanxi University of Science & Technology

Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences

### **Topics:**

- 1) Friction and wear in surface engineering
- 2) Tribology of coating under special serve conditions
- 3) Lubricating materials and tribochemistry
- 4) Tribology of thin film and micro/nano surface
- 5) Tribology of biological biomimetic surface
- 6) Industrial tribology and sealing surface technology

## **Forum VIII: Study on micro/nano-structure and surface film**

### **President:**

Peng-jun CAO, Professor, Chongqing University of Science and Technology

### **Conveners:**

Wei CAI, Professor, Chongqing University of Science and Technology

Deng-ming, CHEN, Chongqing University of Science and Technology

### **Host:**

Chongqing University of Science and Technology

**Topics:**

- 1) Properties of micro/nano-structure and surface
- 2) Study of preparation and performance of functional film
- 3) Infiltrated layer and conversion coating on metal surface
- 4) New electroplating and electroless plating

**Forum IX: Surface modification by plasma**

**President:**

Wei-feng HE, Professor, Air Force Engineering University

**Convener:**

Wei-feng HE, Professor, Air Force Engineering University

**Hosts:**

Air Force Engineering University  
Science and Technology on Plasma Dynamics Laboratory

**Topics:**

- 1) Reciprocity of plasma and materials and monitoring
- 2) Surface strengthening/modification of plasma
- 3) Coating and cladding of plasma
- 4) Etching/rinsing of plasma materials

**Forum X: Nuclear materials and surface engineering**

**Presidents:**

Zhen-bing CAI, Professor, Southwest Jiaotong University  
Jun-hua HU, Professor, Zhengzhou University

**Convener:**

Zhen-bing CAI, Professor, Southwest Jiaotong University  
Jun-hua HU, Professor, Zhengzhou University

**Hosts:**

Zhengzhou University  
Southwest Jiaotong University  
National Center for International Research of Intelligent Design of Low-carbon Environmental  
Friendly Materlas

**Topics:**

- 1) Surface structure design of new fuel
- 2) Behavior and environment damage of nuclear materials
- 3) Coating surface protection of accident tolerant fuel
- 4) Corrosion test on supercritical water material
- 5) Study on the design of nuclear power radiation protection
- 6) Coating and surface strengthening of nuclear materials
- 7) Application of surface engineering in the area of nuclear

## Language

Chinese and English, simultaneous interpretation available

## Paper

1. Scope: including but not limited to the topics discussed in academic forums.
2. Format:

abstract or full text.

3. Instructions for authors:

(1) the paper shall be written in English; (2) the content of paper shall not be delivered or published by other publications; (3) the paper shall be novel, scientific and practical; (4) the data and conclusion shall be dependable; (5) the moral rules for publication shall be followed; (6) no national secret shall be involved (for contribution from organization engaged in national defense, aerospace or military affairs, proof of non-confidentiality is required); and (7) the paper shall be saved as a Word document named as “author’s name + organization + serial number of theme forum”. In case of any oral presentation or poster, please write it down.

4. Publication:

1) The paper will be included in the conference proceedings after it has passed the expert review, which will not be published in any form (including online) but for conference exchange only; and

2) Outstanding paper will be promoted to the media support, namely Surface Technology, and be published in regular issue after normal review process (fees for going over and article processing are required).

5. How and when to submit:

You are required to log in the “Submission System” on <https://icssta2023.scimeeting.cn> for submission.

Please submit your article before May22, 2023.

**Please submit your article in full text before April 30, 2023 if recommendation for publication in *Surface Technology* is required.**

6. For other information, please refer to AnnexI *Instructions for Authors*.

### Important Dates

Date of Conference: from June 16 to June 19, 2023

Deadline for Contrition: May 22, 2023

Deadline for Online Registration: June 13, 2023

Registration Date of Conference: June 16, 2023

### Contacts

Person in Charge: Lin-sheng HU +86 15823219738

Contribution to Conference:

Lang ZOU +86 18512865935

Conference Registration and Hotel Reservation:

Xiao WANG +86 17783251550

Tel.:023-68792193

Email: wjqkm@163.com

**Annex I**

**2023 International Conference on Surface Science Technology and Application  
Instructions for Authors**

The 2023 International Conference on Surface Science Technology and Application will be held in Chongqing, China from 16<sup>th</sup> June to 19<sup>th</sup> June in 2023 on the theme of *Focusing on new technologies in the field of surface science and promoting deeply integrated global development*. Your contributions are welcomed

**1. Scope: including but not limited to the topics discussed in academic forums.**

<b>Parallel Forum</b>	<b>Scope</b>
Forum I. Advanced Laser Surface Processing and Manufacturing	1) Laser surface strengthening 2) Laser cleaning and polishing 3) Laser material deposition 4) Laser manufacturing on functional surface 5) Laser composite manufacturing on surface 6) Other techniques related to laser manufacturing 7) Mechanism on the interaction between laser and materials
Forum II. Special Functional Coatings and Technology	1) Thermal control coating and technology 2) Radiation-resistant coating and technology 3) Atomic oxygen protective coating and technology 4) High-temperature insulation coating and technology 5) Stealth coating and technology 6) Other special functional coatings and technologies
Forum III. Advanced Thermal Spray Process and its Application in Engineering	1) Design and manufacturing of advanced ceramic coating 2) Process and application of metal ceramic composite coating 3) Design and manufacturing of new alloy coating 4) Manufacturing of composite functional coating and advanced applications
Forum IV: Precision and Ultra-precision Machining of Surface	1) Precision machining and blade tools 2) Ultra precision grinding and equipment 3) Surface integrity and measurement 4) Precision ultrasonic-assisted machining and equipment 5) Precision surface finish machining 6) Grinding and polishing and relevant techniques
Forum V: Functional Surface Structure of Biomaterials and Biomimetic Materials and its Design	1) Biological surface behavior 2) Characterization of biological surface materials 3) Design of biomimetic surface materials 4) Biomimetic surface engineering 5) Surfaces and interfaces

Forum VI: Corrosion and Surface Engineering of Metal Materials in Energy and Power System	<ol style="list-style-type: none"> <li>1) Surface protection under extreme serve conditions in oil &amp; gas field</li> <li>2) Surface engineering of metal material used in new energy and its deterioration mechanism</li> <li>3) Corrosion mechanism of metal material used in hydrogen energy and its surface protection</li> <li>4) Surface engineering of light metal materials</li> </ol>
Forum VII: Friction, wear and lubrication of surface and interface	<ol style="list-style-type: none"> <li>1) Friction and wear in surface engineering</li> <li>2) Tribology of coating under special serve conditions</li> <li>3) Lubricating materials and tribochemistry</li> <li>4) Tribology of thin film and micro/nano surface</li> <li>5) Tribology of biological biomimetic surface</li> <li>6) Industrial tribology and sealing surface technology</li> </ol>
Forum VIII: Study on micro/nano-structure and surface film	<ol style="list-style-type: none"> <li>1) Properties of micro/nano-structure and surface</li> <li>2) Study of preparation and performance of functional film</li> <li>3) Infiltrated layer and conversion coating on metal surface</li> <li>4) New electroplating and electroless plating</li> </ol>
Forum IX: Surface modification by plasma	<ol style="list-style-type: none"> <li>1) Reciprocity of plasma and materials and monitoring</li> <li>2) Surface strengthening/modification of plasma</li> <li>3) Coating and cladding of plasma</li> <li>4) Etching/rinsing of plasma materials</li> </ol>
Forum X: Nuclear materials and surface engineering	<ol style="list-style-type: none"> <li>1) Surface structure design of new fuel</li> <li>2) Behavior and environment damage of nuclear materials</li> <li>3) Coating surface protection of accident tolerant fuel</li> <li>4) Corrosion test on supercritical water material</li> <li>5) Study on the design of nuclear power radiation protection</li> <li>6) Coating and surface strengthening of nuclear materials</li> <li>7) Application of surface engineering in the area of nuclear</li> </ol>

## 2. Requirements

- 1) Your article can be delivered either as an abstract or in full text;
  - 2) You may submit your article in English, which will not be returned, please leave your own draft;
  - 3) The content of article shall not be delivered or published by other publications;
  - 4) The article shall be novel, scientific and practical. The data and conclusion shall be dependable.
- The moral rules for publication shall be followed. No national secret shall be involved (for contribution from organization engaged in national defense, aerospace or military affairs, proof of non-confidentiality is required);

5) The article shall be saved as a Word document named as “author’s name + organization + serial number of parallel forum”. In case of any oral presentation or poster, please write it down; and

6) For more details, please refer to the template.

### **3. How and when to submit**

You are required to log in the “Submission System” on <https://icssta2023.scimeeting.cn> for submission.

Please submit your article before May22, 2023.

**Please submit your article in full text before April 30, 2023 if recommendation for publication in *Surface Technology* is required.**

### **4. Publication**

1) The paper will be included in the conference proceedings after it has passed the expert review, which will not be published in any form (including online) but for conference exchange only; and

2) Outstanding paper will be promoted to the media support, namely *Surface Technology*, and be published in regular issue after normal review process (fees for going over and article processing are required).

### **5. Appraisal for Outstanding Papers**

Outstanding Papers Award will be established for young people aged 35 and below, including 10 Outstanding Presentation Awards and 10 Outstanding Exhibition Awards. Prizes and certificates will be awarded to the winners.

### **6. Contacts**

Contact for submission: Lang ZOU

Tel.:+86-18512865935/023-68792193

E-mail: [wjkbm@163.com](mailto:wjqkbm@163.com)

## Template:

Click here, type the title of your paper, Capitalize first letter

First Author <sup>a</sup>, Second Author <sup>b</sup>, Third Author <sup>a,b</sup>

<sup>a</sup> First affiliation, Address, City and Postcode, Country

<sup>b</sup> Second affiliation, Address, City and Postcode, Country

Please list the names, years of birth, educational attainment, titles, posts, research areas and E-mails of the first author and the corresponding author.

The authors and the organizations to which the intellectual property belongs shall not be added, deleted or modified since the submission.

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### Abstract (300 words)

Click here and insert your abstract text.

*Keywords:*Type your keywords here, separated by semicolons ;

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### Text

Please make sure that you use as much as Times NewRoman fonts in your documents. To avoid unnecessary errors you are strongly advised to use the 'spellchecker' function of Word. Footnotes should be avoided if possible.

### Research Articles

Introduction, experimental methods, results & discussion and conclusion shall be included. Requirements: 1) the contention shall be clear (usually referred to that explaining your topics); 2) the argument shall be solid (the tests, test data, graphs, tables, etc. are accurate); 3) the demonstration shall be sufficient (the discussion, result analysis and discussion on mechanism are detailed but not burdensome); and 4) the conclusion shall be complete.

The first-level, second-level and third-level chapters shall be numbered as 1, 2, 3..., 1.1, 1.2, 1.3..., 1.1.1, 1.1.2, 1.1.3...respectively.

### Introduction

Provide a theoretical basis and context for the study (that is, the reason for the study). State its advancement, innovation, etc.

### Experiment

Clearly describe the basic procedures of the study. Cite pertinent references. Ensure the reliability of the study, and make readers be able to validate the experiment based on the content.

### Results & Discussion

Present your results in logical sequence in the text, tables, and figures. Do not repeat the data in the tables or figures. Do not repeat all the data in the tables or figures in the text. Figures and tables should be numbered consecutively in the order in which they are first mentioned in the text with concise titles (no detailed experimental conditions). The texts and data on figures shall be clear and visible.

The spelled-out abbreviation followed by the abbreviation in parenthesis should be used on first mention. Units of measurements should be reported in International System of Units.

Please edit the formats with Mathtype.

### Conclusion

Emphasize the new and important aspects and shortcomings of your study and put your findings in the context of experimental results. Do not repeat the data or other information given in other parts of the manuscript, such as in the Introduction or the Results section. State the possible influence of the findings and the meaning of further study combined with results.

### Review Articles

Do not simply list the previous work and conclusions, state your own opinions and evaluations based on the contents described. Show in the manuscript with their contributions, influence, advantages and deficiencies, and whether there is any universal rule in results achieved.

Figures should be clear with a resolution no less than 300 dpi.

### References

Journals or books published in recent years that you have read should be selected. References should be numbered consecutively in the order in which they are first mentioned in the text, and the sequence numbers should be identified in square brackets in the top right corner. For example:

- (1) Journal: ZOU Hong-qing, LYU Ji-cheng, WU Hou-chang, et al. Study of synergistic fluoropolymer coating technology on steel surface technology[J]. Surface technology, 2006, 35(5): 26-28.
- (2) Monograph: LI Ning. Operative technology of electroless plating[M]. Beijing: Chemical Industry Press, 2012.
- (3) Dissertation: LI Li. Preparation and frictional properties of polyamideimide coating[D]. Dalian: Dalian Maritime University, 2015.
- (4) Proceedings: LYU Ji-cheng, ZOU Hong-qing. Application of synergistic fluoropolymer coating on moulds of full-automatic making bag filling and sealing machine[C]//The fourth equipment environmental engineering development forum. Chongqing: Chongqing Wujiu Periodicals Press, 2016: 434-437.
- (5) Patent: ZOU Hong-qing, WU Hou-chang, LV Ji-cheng, et al. Preparation method of a synergistic fluoropolymer coating on steel: China, CN1296516C[P]. 2007-01-01.
- (6) Standard: ASME B31G—1991, Manual for determining the remaining strength of corroded pipelines[S].

No more than 3 authors should be listed in full, separated by “,”; 3 of 4 authors should be listed with “et al.”. The author's name in the reference should be written as surname in full + given name in abbreviation. The journal title in reference should be written in its official full name.