

Dr. Chen, Zhong (陈忠)

Professor (**Highly Cited Researcher by Clarivate; Top 2% Scientist by Stanford University**)

School of Materials Science and Engineering
Nanyang Technological University,
50 Nanyang Avenue, Singapore 639798
Tel: +65 67904256; Fax: +65 67909081



Email: ASZChen@ntu.edu.sg

Personal Web: <https://personal.ntu.edu.sg/aszchen>

Web of Science: <https://www.webofscience.com/wos/author/record/1577771>

Google Scholar: <https://scholar.google.com.sg/citations?user=JxTQyrEAAAAJ&hl=en>

ACADEMIC QUALIFICATIONS

- Ph.D. (Mech. Mat.), University of Reading, The United Kingdom, 1997
- M.Eng. (Mat. Sci. & Eng.), Hefei University of Technology, China, 1987
- B.Eng. (Met. & Mat. Sci.), China University of Mining and Technology, China, 1984

PROFESSIONAL EXPERIENCE

- March 2000 – present: Professor / Associate Professor / Assistant Professor, School of Materials Science & Engineering, Nanyang Technological University, Singapore
 - April 2011 – March 2018: Director, Advanced Materials Research Centre, Nanyang Technological University, Singapore (concurrent appointment)
 - July 2009 – July 2014: Assistant Chair (Undergraduates), School of Materials Science & Engineering, Nanyang Technological University, Singapore (concurrent appointment)
- April 1997 – March 2000: Research Fellow / Research Associate, Institute of Materials Research and Engineering, Singapore
- May 1992 – April 1997: Research Student Assistant / Visiting Researcher, Department of Engineering, University of Reading, U.K.
- June 1987 – May 1992: Lecturer / Assistant Lecturer, Department of Materials Science and Engineering, Hefei University of Technology, China

RESEARCH INTERESTS

- Thin Films & Nanostructured Materials: Thin films & engineered nanostructures for environmental and clean energy applications; Electronic thin films; Protective and functional surface coatings.
- Mechanical & Long-term Behaviors of Materials: Fracture, fatigue, and creep of bulk monolithic & composite materials, thin films and multi-layers; Experimental and computational mechanics; Materials degradation and failure analysis.

INTERNATIONAL CONFERENCE ORGANIZATION

- Organizer for more than 70 times of international conferences in the capacity of organizing committee members, scientific committee member, technical committee member, and symposium chair, etc.

EDITORSHIP

- Editorial Advisory Board (Mar 2006 – Jan 2019), Circuit World, Emerald (ISSN: 0305-6120)

- Area Editor & Editorial Board (Aug 2009 – Jun 2016), Simulation Modelling Practice and Theory, Elsevier (ISSN: 1569-190X)
- Editorial Committee (Jul 2012 –), China Surface Engineering (中国表面工程), Chinese Mechanical Engineering Society (ISSN: 1007-9289)
- Editorial Board (Jun 2014 – Dec 2020), Mechanics of Advanced Materials and Modern Processes, Springer (ISSN: 2198-7874)
- Editor (May 2017 –) of Mechanics of Advanced Materials book series, Elsevier
- Editorial Board (Nov 2017 –), Surfaces, MDPI AG, Switzerland (ISSN: 0004-0004)
- Editorial Board (May 2018 –) of Surface Technology (表面技术), published by China South Industries Group Corporation (ISSN: 1001-3660)

- Guest Editor, Key Engineering Materials, Vol. 227: Special issue on “Modeling of Materials”, Trans Tech Publications 2002 (ISSN: 1013-9826)
- Guest Editor, Materials Science and Engineering A, Vol. 423 (Nos. 1-2): Special issue on “Mechanical Behaviour of Micro- and Nano-scale Systems”, Elsevier 2006 (ISSN: 0921-5093)
- Guest Editor, Thin Solid Films, Vol. 517 (No. 17), Elsevier 2009 (ISSN: 0040-6090)
- Guest Editor, Journal of Nanoscience and Nanotechnology, Vol. 10 (No. 7), American Scientific Publishers 2010 (ISSN: 1533-4880)
- Guest Editor, International Journal of Modern Physics B, Vol. 24 (Nos. 1-2), World Scientific 2010 (ISSN: 0217-9792)
- Guest Editor, Thin Solid Films, Vol. 519 (No. 15), Elsevier 2011 (ISSN: 0040-6090)
- Guest Editor, Thin Solid Films, Vol. 544, Elsevier 2013 (ISSN: 0040-6090)
- Guest Editor, Thin Solid Films, Vol. 584, Elsevier 2015 (ISSN: 0040-6090)
- Guest Editor, Journal of Nanomaterials: Special issue on “TiO₂-based Nanomaterials: Design, Synthesis, and Applications”, Hindawi Pub. Corp. 2015 (ISSN: 1687-4110)
- Guest Editor, Materials & Design, Virtual Special Issue on “Recent Advances in Materials for Sports Technology”, Elsevier 2016 (ISSN: 0261-3069)
- Guest Editor, Surface and Coatings Technology, Vol. 320, Elsevier 2017 (ISSN: 0257-8972)
- Guest Editor, Materials & Design, Virtual Special Issue on “Materials and Design for Sports Technology”, published by Elsevier 2018 (ISSN: 0261-3069)
- Guest Editor, Coatings, Special issue on “Thin Films for Energy Harvesting, Conversion, and Storage”, MDPI 2019 (ISSN: 2079-6412)
- Guest Editor, Surface and Coatings Technology, Virtual Special Issue for Thin Films 2018 papers, Elsevier 2019 (ISSN: 0257-8972)

REVIEWER FOR INTERNATIONAL JOURNALS

ACS Applied Materials & Interfaces; ACS Materials Letters; ACS Omega; ACS Sustainable Chemistry & Engineering; Acta Materialia; Advanced Functional Materials; Advanced Materials; Angewandte Chemie; Applied Catalysis A: General; Applied Catalysis B: Environmental; Applied Physics Letters; Applied Surface Science; Beilstein Journal of Nanotechnology; Chemical Engineering Journal; Chinese Journal of Catalysis; Circuit World; Composites Science and Technology; CrystEngComm; Electrochemistry Communications; Energy & Environmental Science; Engineering Fracture Mechanics; Environmental Science & Technology; IEEE Transactions on Advanced Packaging; IEEE Transactions on Components and Packaging Technologies; IEEE Transactions on Device and Materials Reliability; IEEE Transactions on Electronics Packaging Manufacturing; International Journal of Computational Methods; International Journal of Fracture; International Journal of Modern Physics B; International Journal of Photoenergy; Journal of Alloys and Compounds; Journal of Applied Physics; Journal of Colloid and Interface Science; Journal of Composite Materials;

Journal of Electronic Materials; Journal of Electronic Packaging; Journal of Hazardous Materials; Journal of Materials Chemistry A; Journal of Materials Chemistry C; Journal of Materials Research; Journal of Materials Science: Materials in Electronics; Journal of Materials Science & Technology; Journal of Mechanical Engineering Science; Journal of Molecular Catalysis A: Chemical; Journal of Nanoscience and Nanotechnology; Journal of Solid State Chemistry; Key Engineering Materials; Korean Journal of Chemical Engineering; Langmuir; Materials Characterization; Materials Chemistry and Physics; Materials & Design; Materials Letters; Materials Science and Engineering A; Materials Science and Engineering B; Mechanics of Advanced Materials and Modern Processes; Metallurgical and Materials Transactions A; Microelectronic Engineering; Microelectronics Reliability; Microsystem Technologies; Molecules; Nanoscale; Nanoscience and Nanotechnology Letters; Nature Catalysis; Nature Communications; Physical Chemistry Chemical Physics; Polymers for Advanced Technologies; Progress in Organic Coatings; RSC Advances; Scientific Reports; Scripta Materialia; Semiconductor Science and Technology; Simulation Modelling Practice and Theory; Small; Soldering & Surface Mount Technology; Solid State Phenomena; Spectroscopy and Spectral Analysis; Surface and Coatings Technology; Surfaces; Surfaces and Interfaces; Surface and Interface Analysis; The Journal of Physical Chemistry; The Journal of Physical Chemistry Letters; Thin Solid Films; Tribology International

SELECTED RESEARCH PROJECTS (in reverse chronological order)

- “Epoxy Mold Compounds for High Voltage Applications”, Industry funded, Jan 2025-Jan 2029, Principal Investigator
- “Hybrid surfaces towards atmospheric dew water harvesting”, MOE Tier 1 grant RG 7/24, 01 Nov 2024-31 Oct 2027, Principal Investigator
- “Ceramic-fibre metal-matrix composites: interface and manufacturing”, Industry funded, Feb 2024-Aug 2026, Principal Investigator
- “Large-scale applications of carbon in concrete”, funded under NRF IAF-ICP scheme, Feb 2024-Jan 2029, Co-Principle Investigator & Principal Investigator of WP2
- “Surface Functionalization of Polymeric Materials using Plasma Technique towards Practical Applications”, MOE Tier 1 grant RG 8/21, Nov 2021-Oct 2024, Principal Investigator
- “Distribution Switchgear Degradation Study”, jointly funded by SP PowerAssets Ltd (SP) and Energy Market Authority (EMA), Jan 2021-Jun 2024, Principal Investigator
- “Internet of Things”, funded under NRF IAF-ICP scheme, Jan 2019-Jan 2024, Program Principal Investigator
- “Soft Magnetic Materials Development for High Performance Aerospace Electrical Machines”, funded under NRF IAF-ICP scheme, Jan 2019-Jan 2024, Principal Investigator
- “Fast treatment of gaseous pollutants through synergistic photocatalytic-plasma actions”, MOE Tier 1 grant RG 16/18, Nov 2018-Oct 2021, Principal Investigator
- “Quantifying the effect of lattice defects in semiconductor oxides towards more efficient photoelectrochemical fuel generation”, MOE Tier 1 grant RG 15/16, Nov 2016-Oct 2018, Principal Investigator
- “Development of water based bio-epoxy coatings for easy-cleaning, anti-corrosion and anti-icing applications”, A*Star SERC Grant No. 1528000048, Feb 2016-Jan 2019, Principal Investigator
- “Project SMART”, Industry funded, Jan 2016-Dec 2019, Principal Investigator
- “Intermetallic Compound Formation between Palladium-coated Copper Wires and Aluminum Bond Pad”, International collaboration programme funded by NTU, Jul 2015-Jun 2016, Principal Investigator
- “Application-driven understanding and engineering of materials structures”, internal grant awarded by CoE NTU, Mar 2014-Feb 2017, Principal Investigator

- “Development of efficient photocatalysts for solar fuel generation” (A sub-project funded by the Singapore Berkeley Institute for Sustainable Energy through NRF’s CREATE scheme), Apr 2013-Mar 2018, project Principal Investigator
- “Braided Composite Modelling – Failure Analysis and Progressive Damage Prediction”, funded by Defence Research & Technology Office (DRTech), Dec 2012-Nov 2015, Principal Investigator
- “Electrodeposition of gold and nickel films for smart card application”, Industry funded, Aug 2012-Aug 2016, Principal Investigator
- “Study of process responses, intermetallics and reliability of palladium-copper wire bonding”, Industry funded, Jan 2012-Jan 2016, Principal Investigator
- “Multi-functional sol-gel coatings for wind-turbine blade protection”, Industry funded, Sep 2011-Sep 2014, Principal Investigator
- “Modelling of Braided Textile Composites”, funded by Defence Science and Technology Agency (DSTA) TL/POD0814080/01, Jun 2009-Sep 2012, Principal Investigator
- “Low-temperature Solution-processed Protonated Titanium Oxides for Photocatalytic Applications”, National Research Foundation (NRF) / Environment and Water Industry Development Council (EWI) grant MEWR 651/06/160, Jan 2009-Dec 2011, Principal Investigator
- “Ultra-fine Pitch Copper Interconnections for Future Generation Miniaturised Devices”, The British Council PMI2 Strategic Alliances and Partnerships project (Research Co-operation strand) RC 41, Apr 2008-Dec 2010, Lead Researcher
- “Development of Damage- and Failure-Resistant Nanostructured and Interfacial Materials”, University Research Committee RG 31/06, Oct 2006-Oct 2008, Principal Investigator
- “Design and Construction of A Photocatalytic Reactor for Hydrogen Generation”, Office of Research, Nanyang Technological University RG 112/05, Feb 2006-Feb 2007, Principal Investigator
- “Nanostructured Materials, Systems and Devices”, University Research Council RG 14/03, Apr 2004-Apr 2007, Principal Investigator
- “Intrinsic Stress in Electroless Nickel Plating and Its Effect on Reliability”, NTU AcRF grant RG 19/00, Dec 2000-Nov 2003, Principal Investigator

SERVICES HIGHLIGHT (MSE / NTU) (in reverse chronological order)

- Chair of EAB Accreditation Committee for BEng (Materials Engineering), School of MSE
- Senator of the Academic Council, NTU (elected)
- Chair, School / College Search Committee for New Faculty Appointment (for all levels)
- Chair, School Review Committee for Promotions and Tenure
- Chair, Committee for Students’ Global Experience, School of MSE
- Director, Advanced Materials Research Centre, NTU
- Assistant Chair (Undergraduates), School of MSE
- Chair, Nanyang Research Program Committee, NTU
- Member, Singapore Science and Engineering Fair Working Committee, Ministry of Education Singapore
- Member, Curriculum Review Committee, School of MSE
- Member, Aerospace Engineering Task Force & Curriculum Committee, NTU
- Member, MSE School Advisory Committee (appointed by NTU president)
- Lab Director, Surface Engineering Lab, School of MSE
- Final Year Project Coordinator, School of MSE

PUBLICATIONS (in reverse chronological order)

Patents (granted, based on filing date)

1. Chinese Patent ZL201980064538X (filed on 30 Mar 2021, **granted** on 05 January 2024), “Janus Particle

- Preparation Through Two-Phase Interface Assembly”
- US Patent 10,851,265 (filed on 01 Aug 2019; **granted** on 01 December 2020), “Polymeric Composition with Anti-icing and Self-cleaning Properties”
 - US Patent 10,355,366 (filed on 25 May 2016; **granted** on 16 July 2019), “Microwave Absorbing Composite For Turbine Blade Applications”
 - Singapore Patent 183898 (filed on 04 September 2012; **granted** on 30 Sep 2013) / US Patent 9,738,986 (filed on 08 March 2011; **granted** on 22 Aug 2017), “Method Of Manufacturing Layered Metal Oxide Particles And Layered Metal Oxide Particles Formed Thereof”
 - Singapore Patent 178248 (filed on 11 Aug 2010; **granted** on 30 Apr 2012) / US Patent 9,868,109 (filed on 11 Aug 2010; **granted** on 16 Jan 2018), “Titanate / Titania Composite Nanoparticle”
 - US Patent 8,647,922 (filed on 08 Nov 2007; **granted** on 11 Feb 2014), “Method of Forming an Interconnect on a Semiconductor Substrate”
 - US Patent 6,776,050 (filed on 28 Sep 2001; **granted** on 17 Aug 2004), “Support for Bending Test of Flexible Substrates”
 - US Patent 6,797,211 (filed on 13 Jun 2001; **granted** on 28 Sep 2004) / Taiwan Patent 529182 (filed on 07 Jul 2000; **granted** on 21 Apr 2003) / European Patent 1133789 (filed on 09 Jul 1999; **granted** on 05 Nov 2008), “Mechanical Patterning of A Device Layer”

Book Chapters

- C. Wang, Z. Chen, A. Roy, V. V. Silberschmidt “Energy absorption of composite shin-guard structure under low-energy impacts”, Invited contribution of Chapter 20 in: *Dynamic Deformation, Damage, and Fracture in Composite Materials and Structures*, 2nd edition (Book Editor: Vadim V. Silberschmidt), Elsevier, 2023, pp. 623-637 (ISBN: 9780128239797)
- Z. Chen, T. T. Lim “Nanostructured Catalytic and Adsorbent Materials for Water Remediation”, Invited contribution of Chapter 4 in: *50 Years of Materials Science in Singapore* (Editors: F. Boey, B. V. R. Chowdari, S. S. Venkatraman), World Scientific Publishing, 2016, pp. 75-111, (ISBN: 9789814730693)
- Z. Chen, L. Y. L. Wu “Scratch Damage Resistance of Silica-based Sol-Gel Coatings on Polymeric Substrates”, Invited contribution of Chapter 14 in: *Tribology of Polymeric Nanocomposites: Friction and Wear of Bulk Materials and Coatings*, 2nd edition (Book Editors: K. Friedrich and A. K. Schlarb), Elsevier, 2013, pp. 467-511 (ISBN: 9780444594556)
- Y. K. Lai, C. J. Lin, Z. Chen “Extremely Wetting Pattern by Photocatalytic Lithography and Its Application”, Invited book chapter in *Recent Advances in Nanofabrication Techniques and Applications* (Book Editor: B. Cui), InTech, 2011, pp. 591-614 (ISBN 9789533076027)
- Z. Chen, L. Y. L. Wu “Scratch Resistance of Protective Sol-Gel Coatings on Polymeric Substrates”, Invited contribution of Chapter 14 in: *Tribology of Polymeric Nanocomposites: Friction and Wear of Bulk Materials and Coatings* (Book Editors: K. Friedrich and A. K. Schlarb), Elsevier, 2008, pp. 325-353 (ISBN: 9780444531551)
- B. Cotterell, Z. Chen, A. G. Atkins “On the Extension of the J_R Concept to Significant Crack Growth”, Invited contribution to *Multiscale Deformation and Fracture in Materials and Structures*, Solid Mechanics and Its Applications series - Volume 84 (The James R. Rice 60th Anniversary Volume, edited by T.-J. Chuang and J. W. Rudnicki), Springer, 2002, pp. 223-236 (ISBN: 9781402003813)

Journal Articles

2025

- J. B. Cao, J. Wang, Z. N. Li, B. W. Cao, Z. C. Wang, X. F. Cao, Z. Chen, G. Q. Zhu “Oxygen vacancies modified 2D/2D Z-scheme heterojunction of Ce-doping BiOBr/g-C₃N₄ to trigger efficient CO₂ photoreduction”, *Separation and Purification Technology*, 2025, Vol. 372, Article 133484
- C. Li, J. Shi, B. Li, Zhen Cao, L. Wei, Z. Q. Yu, D. Wu, Y. M. Gao, P. C. Bai, Z. Chen “Influence of CrB₂ micro/nanoparticles on the microstructural characteristics, mechanical performances, and lubrication mechanisms of Cu matrix composites”, *Journal of Alloys and Compounds*, 2025, Vol. 1030, Article 180949
- S. N. Ke, J. N. Li, R. D. Li, J. B. Zhu, Y. Chen, J. Hu, Y. K. Lai, J. Y. Huang, X. H. Wu, Z. Chen “Recent developments in the fabrication, performance, and application of transparent superhydrophobic coatings”, *Advances in Colloid and Interface Science*, 2025, Vol. 342, Article 103537
- J. W. Jiang, Y. Z. Shen, Y. J. S. Xu, Z. Wang, S. Y. Liu, Y. Y. Lin, J. Tao, Z. Chen “Excellent Dynamic Non-Wetting Performance Induced by Asymmetric Structure at Low Temperatures: Retraction Actuation and Nucleation Inhibition”, *Advanced Science*, 2025, Vol. 12, Article 2500590
- X. R. Zang, Y. Cheng, Y. M. Ni, W. W. Zheng, T. X. Zhu, Z. Chen, J. Bian, X. W. Cao, J. Y. Huang, Y. K. Lai “A Biomimetically Constructed Superhydrophobic Coating with Excellent Mechanical Durability and Chemical Stability for Gas Transmission Pipeline”, *Engineering*, 2025, Vol. 47, pp. 152-159
- S. J. Yang, Y. C. Zhu, C. M. Wang, R. D. Li, J. Hu, Z. Chen “Evaluation of hydrogen trapping capability at interfaces between vanadium carbide and vanadium nitride nanoprecipitates with α -Fe by density functional theory”, *Coatings*, 2025, Vol. 15, Article 466

7. H.-B. Yuan, L. Wei, J. P. Wang, M. M. Zhao, G. Q. Chen, T. L. Xing, Z. Chen "Robust and Breathable Electronic Textiles with Anti-icing and Photothermal De-icing Properties Modified by ZIF-8/Polypyrrole", *Chemical Engineering Journal*, 2025, Vol. 509, Article 161569
8. B. Li, Y. M. Gao, C. Li, Z. Cao, X. J. Yao, D. Wu, P. C. Bai, Z. Chen "Influence of MoB₂ and ZrB₂ ceramic particles on the microstructure, electrical conductivity, and mechanical properties of copper matrix composites", *Ceramics International*, 2025, Vol. 51, pp. 9257-9269
9. Y. H. Deng, Y. W. Wong, L. K. Y. Teh, Q. Wang, W. F. Sun, W. K. Chern, J. T. Oh, Z. Chen "Optimizing Dielectric, Mechanical, and Thermal Properties of Epoxy Resin through Molecular Design for Multifunctional Performance", *Materials Horizons*, 2025, Vol. 12, pp. 1323-1333
10. C. Li, B. Li, Y. M. Gao, Z. Cao, X. J. Yao, D. Wu, P. C. Bai, Z. Chen "Evolution of the microstructure, electrical, and tribological properties of copper-based composites reinforced with MoB₂ ceramic particles", *Journal of Alloys and Compounds*, 2025, Vol. 1017, Article 179150
11. Q. Wang, W. X. He, Y. H. Deng, Y. Zhang, W. K. Chern, Z. P. Lv, Z. Chen "Machine learning-driven interfacial characterization and dielectric breakdown prediction in polymer nanocomposites", *Composites Part B: Engineering*, 2025, Vol. 296, Article 112226
12. Q.-Yu. Wang, Y. C. Zhu, R. Jiang, G. He, J. Zhao, J. Hu, T. Liu, H. H. Liu, S.-L. Loo, Z. Chen, J.-X. Wang, Z. Y. Pan, X. N. Li, D. P. Cao, Z.-T. Hu "Structure matching mechanism of nRu/FeCo₂O₄ for highly-selective oxidation of HMF toward FDCA", *AIChE Journal*, 2025, Vol. 71, Article e18671
13. X. Y. Duan, Y. Z. Mi, T. Y. Lei, X. Y. D. Ma, Z. Chen, J. H. Kong, X. H. Lu "Highly elastic sponge-like hydrogels for impedance-based multimodal sensing", *ACS Nano*, 2025, Vol. 19, pp. 2909-2921
14. J. P. Fei, D. Han, K. Zhou, S. W. Koh, J. Y. Ge, J. Y. Tan, B. F. Ng, Z. Chen, L. L. Cai, H. Li "Electrostatic repellent dispersion method for green and cost-effective aqueous radiative cooling paint", *Building and Environment*, 2025, Vol. 269, Article 112462
15. S. L. Zheng, D. A. Bellido-Aguilar, X. H. Wu, X. T. Zeng, Z. Chen "Waterborne superhydrophobic bio-epoxy coating on Al alloy for corrosion-resistant and self-cleaning applications", *Surface and Coatings Technology*, 2025, Vol. 496, Article 131621
16. B. Li, Y. M. Gao, C. Li, Z. Cao, X. J. Yao, D. Wu, P. C. Bai, Z. Chen "Microstructural characteristics, electrical conductivity and mechanical properties of Cu matrix composites reinforced with dual-phase borides", *Journal of Materials Research and Technology*, 2025, Vol. 34, pp. 1-14
17. Y. H. Deng, Q. Wang, Z. Y. Pan, Z. P. Lv, W. K. Chern, J. T. Oh, Z. Chen "Unravelling the Role of Filler Surface Wettability in Long-Term Mechanical and Dielectric Properties of Epoxy Resin Composites under Hygrothermal Aging", *Journal of Colloid and Interface Science*, 2025, Vol. 682, pp. 50-59

2024

18. H. Zhao, X. Zhao, J. J. Zhang, S. Anandita, W. Liu, S. W. Koh, S. Y. Yu, C. J. Li, Z. Chen, R. Xu, Z. G. Zou, W. G. Tu, and H. Li "Solar-Driven Photoelectrochemical Upcycling of Polyimide Plastic Waste with Safe Green Hydrogen Generation", *Advanced Energy Materials*, 2024, Vol. 14, Article 2400037
19. Y. F. Li, Y. Tan, M. K. Zhang, J. Hu, Z. Chen, L. S. Su, J. Y. Li "Improved Nitrate-to-Ammonia Electrocatalysis through Hydrogen Poisoning Effects", *Angewandte Chemie International Edition*, 2024, Vol. 63, Article e202411068
20. L. Wei, H. S. Soo, Z. Chen "Patterned hybrid surfaces for efficient dew harvesting", *ACS Applied Materials & Interfaces*, 2024, Vol. 16, pp. 51715-51726
21. S. L. Wei, Y. F. Zhang, H. J. Tan, Z. Q. Xia, L. J. Zhai, J. Hu, Q. Yang, G. Xie, Z. Chen, S. P. Chen "In Situ MOF-74-Pyrolysis-Generated Porous Carbon Supporting Spinel Cu_{0.15}Co_{2.85}O₄/C Boosts Ammonium Perchlorate Accelerating Decomposition: Precise Cu Doping Modulating Oxygen Vacancy Concentration", *Small*, 2024, Vol. 20, Article 2400712
22. J. Li, W. C. Jiao, H. Z. Jin, H. M. Sun, Y. H. Jia, Z. Chen, X. D. He "Durable one-component polyurea icephobic coatings with energy-saving performance in electrical heating de-icing", *Chemical Engineering Journal*, 2024, Vol. 498, Article 155793
23. Z. Q. Li, Z. Chen, J. T. Oh, V. Gill, A. Lambourne "Improving the mechanical and magnetic properties of equiatomic FeCo-2V alloy through mild magnetic field annealing", *Metallurgical and Materials Transactions A*, 2024, Vol. 55A, pp. 4061-4071
24. L. Wei, P. Y. Wang, X. Y. Chen, Z. Chen "Water vapor condensation behavior on different wetting surfaces via molecular dynamics simulation", *Surfaces and Interfaces*, 2024, Vol. 52, Article 104981
25. H.-B. Yuan, M. M. Zhao, J. P. Wang, G. Q. Chen, Z. Chen, T. L. Xing "Flexible, breathable, and durable superhydrophobic cotton fabric modified by behenic acid, tung oil, and ZIF-8 with anti-icing and self-cleaning properties", *International Journal of Biological Macromolecules*, 2024, Vol. 277, Article 133847
26. F. Y. Zhu, Y. Y. Yu, Z. X. Yu, H. C. Qiu, G.-P. Lu, Z. Chen, J. Hu, Y. M. Lin "S-Doping Regulated Iron Spin States in Fe-N-C Single-Atom Material for Enhanced Peroxidase-Mimicking Activity at Neutral pH", *Small*, 2024, Vol. 20, Article 2311848

27. W. Li, L. B. Yang, J. Y. Huang, C. Zheng, Y. Chen, Y. B. Li, D. P. Yang, S. H. Li, Z. Chen, W. L. Cai, Y. K. Lai "Progress on fiber engineering for fabric innovation in ecological hydrophobic design and multifunctional applications", *Industrial Chemistry & Materials*, 2024, Vol. 2, pp. 393-423
28. Y. C. Zhu, X. F. Cao, S. J. Yang, J. Hu, B. T. Li, Z. Chen "Negative Poisson's ratio of sulfides dominated by strong intralayer electron repulsion", *Physical Chemistry Chemical Physics*, 2024, Vol. 26, pp. 20852-20863
29. Y. N. Zheng, Y. Tan, X. Yu, H. Yao, S. J. Hu, J. Hu, Z. Chen, X. H. Guo "Optimized Intermediates Adsorption Configuration on Co-Doped Fe₂P@NiP₂ Heterojunction Interface for Enhanced Electrocatalytic Nitrate-To-Ammonia Conversion", *Small*, 2024, Vol. 20, Article 2312136
30. Y. Q. Qin, F. Yang, Z. Chen, M. Lu, P. C. Wang "Revealing the electro-oxidation mechanism of 5-aminotetrazole on nickel-based oxides and synthesizing 5,5'-azotetrazolate salts", *Inorganic Chemistry*, 2024, Vol. 63, pp. 12299-12308
31. M. J. Z. Lim, H. G. Loh, M. Goroll, Z. Chen, C. S. Tan "Multi-physics effect of temperature and humidity on copper wire bond degradation via enthalpy-based water-vapour energy", *IEEE Transactions on Components, Packaging and Manufacturing Technology*, 2024, Vol. 14, pp. 945-950
32. X. F. Cao, J. Z. Tian, Y. Tan, Y. C. Zhu, J. Hu, Y. Wang, E. Z. Liu, Z. Chen "Interfacial electron potential well facilitates the design of cobalt phosphide heterojunctions for hydrogen evolution", *Small*, 2024, Vol. 20, Article 2306113
33. T. I. Wong, C. Ng, S. X. Lin, Z. Chen, X. D. Zhou "Adaptive Fabrication of Electrochemical Chips with A Paste-Dispensing 3D Printer", *Sensors*, 2024, Vol. 24, Article 2844
34. M. Muralles, J. T. Oh, Z. Chen "Atomistic Investigation of Effect of Alloying on Mechanical Properties and Microstructural Evolution of Ternary FeCo-X (X = V, Nb, Mo, W)", *Computational Materials Science*, 2024, Vol. 241, Article 113030
35. X. Zhao, N. S. Zhang, Y. Yu, T. Fang, J. Hu, J. Y. Feng, Z. Chen "Exploring Bi₄V₂O₁₁ as photoanode for water splitting with a wide range of solar light capture and suitable band potential", *Photocatalysis: Research and Potential*, 2024, Vol. 1 (2), Article 10002
36. Y. Yang, H. R. Zhang, X. Liu, Y. H. Deng, M. J. Sun, J. F. Wang, Y. H. Cui, L. Pan, Z. Chen "Hierarchical interface design of jute fibers/polypropylene composites for enhanced interfacial and mechanical properties", *Journal of Cleaner Production*, 2024, Vol. 450, Article 141966
37. X. R. Zang, J. Bian, Y. M. Ni, W. W. Zheng, T. X. Zhu, Z. Chen, X. W. Cao, J. Y. Huang, Y. K. Lai, Z. Q. Lin "A Robust Biomimetic Superhydrophobic Coating with Superior Mechanical Durability and Chemical Stability for Inner Pipeline Protection", *Advanced Science*, 2024, Vol. 11, Article 2305839
38. J. Z. Tian, X. F. Cao, T. Sun, H. Miao, Z. Chen, W. H. Xue, J. Fan, E. Z. Liu "Efficient photocatalytic H₂ evolution over NiMoO₄/twinned-Cd_{0.5}Zn_{0.5}S double S-scheme homo-heterojunctions", *Composites Part B: Engineering*, 2024, Vol. 277, Article 111389
39. J. Y. Qu, Z. J. Ren, L. Yan, Y. C. Zhu, J. Hu, Y. X. Tang, Z. Chen "Mixed crystal FeF_x Submicron Spheres Loaded on Fluorinated Graphene as Cathode Materials for Lithium-Ion Batteries", *Journal of Electroanalytical Chemistry*, 2024, Vol. 960, Article 118195
40. Z. J. Chen, B. B. Shen, Y. L. Zhang, H. L. Guo, Z. Chen, R. Wei, J. Hu "Superhydrophobic coating of a modified calcium sulfate whiskers@SiO₂-F/TPU for anti-icing applications", *Advanced Powder Technology*, 2024, Vol. 35, Article 104362
41. M. H. Sheng, X. Q. Bin, Y. W. Yang, Z. Chen, W. X. Que "A green and fluorine-free fabrication of 3D self-supporting MXene by combining anodic electrochemical in-situ etching with cathodic electrophoretic deposition for electrocatalytic hydrogen evolution", *Advanced Materials Technologies*, 2024, Vol. 9, Article 2301694
42. X. D. Liu, F. P. Huo, J. H. Wang, H. Tatsumi, Z. Jin, Z. Chen, H. Nishikawa "Interfacial reactions between In and Ag during solid liquid interdiffusion process", *Surfaces and Interfaces*, 2024, Vol. 45, Article 103844
43. X. D. Liu, H. Tatsumi, J. H. Wang, Z. Jin, Z. Chen, H. Nishikawa "Analysis of microstructures and fractures in Ag-In transient liquid phase bonded joints", *Materials Science and Engineering A*, 2024, Vol. 892, Article 146045
44. X. P. Zhang, Q. Gan, P. Zhou, Z. Chen, Z. H. Zhang, G.-P. Lu "Boosting strong metal-support interactions between Ru and sodium titanate nanowire for hydrogenolysis of polyolefins under mild conditions", *Applied Catalysis B: Environmental and Energy*, 2024, Vol. 344, Article 123626
45. U. Khan, B. W. Gao, L. B. Kong, Z. Chen, W. X. Que "Green Synthesis of Fluorine-Free MXene Via Hydrothermal Process: A Sustainable Approach for Proton Supercapacitor Electrodes", *Electrochimica Acta*, 2024, Vol. 475, Article 143651
46. J. J. Chen, Y. M. Ni, Y. K. Gou, T. X. Zhu, L. Sun, Z. Chen, J. Y. Huang, D. P. Yang, Y. K. Lai "Hydrophobic Organogel Sorbent and Its Coated Porous Substrates for Efficient Oil/Water Emulsion Separation and Effective Spilled Oil Remediation", *Journal of Hazardous Materials*, 2024, Vol. 461, Article 132674

2023

47. X. D. Liu, H. Tatsumi, Z. Jin, Z. Chen, H. Nishikawa "Thermomechanical Properties of Zeta (Ag₃In) Phase", *Materials*, 2023, Vol. 16, Article 7115

48. Y. S. Tay, L. Yang, H. Zhang, H. B. Kor, L. Zhang, H. Liu, V. Gill, A. Lambourne, K. H. H. Li, Z. Chen, C. L. Gan "Ruggedized sensor packaging with advanced die attach and encapsulation material for harsh environment", *Microelectronics Reliability*, 2023, Vol. 150, Article 115115
49. S. M. Liu, Y. Zhou, Z. Zuo, S. Q. Liu, Q. Wang, Z. Chen, X. D. Liang "Inhibiting liquid permeation into silicone rubber by superhydrophobic coating for prolonged service life", *High Voltage*, 2023, Vol. 8, pp. 986-996
50. Q. Wang, Y. H. Deng, M. Yap, Y. Yang, J. L. Ma, W. K. Chern, J. Li, Z. Chen "Electrical tree modelling in dielectric polymers using a phase-field regularized cohesive zone model", *Materials & Design*, 2023, Vol. 235, Article 112409
51. A. M. Gusak, A. Titova, Z. Chen "Flux-driven transformations in open systems revisited - crystallization of amorphous Ni-P driven by reaction with Sn", *Acta Materialia*, 2023, Vol. 261, Article 119366
52. Y. Z. Zhang, D. L. Ma, Y. G. Lei, T. X. Zhu, J. Hu, Y. Tang, Z. Chen, J. Y. Huang, Y. K. Lai, Z. Q. Lin "Markedly Enhanced Hydrogen Production in Wastewater via Ammonia-Mediated Metal Oxyhydroxides Active Sites on Bifunctional Electrocatalysts", *Nano Energy*, 2023, Vol. 117, Article 108896
53. M. Muralles, J. T. Oh, Z. Chen "Modified embedded atom method interatomic potentials for the Fe-Al, Fe-Cu, Fe-Nb, Fe-W and Co-Nb binary alloys", *Computational Materials Science*, 2023, Vol. 230, Article 112488
54. E. X. Ren, X. Zhang, G.-P. Lu, M. Sohail, J. Hu, Z. Chen, D. D. Fan, Y. M. Lin "Iron Single-Atom Anchored on N-Doped Carbon Nanozymes for Chlorpyrifos Detection and Antibacterial Applications", *ACS Applied Nano Materials*, 2023, Vol. 6, pp. 15038-15047
55. H. Liu, H. Luo, J. Y. Huang, Z. Chen, Z. H. Yu, Y. K. Lai "Programmable water/light dual-responsive hollow hydrogel fiber actuator for efficient desalination with anti-salt accumulation", *Advanced Functional Materials*, 2023, Vol. 33, Article 2302038
56. X. D. Liu, H. Tatsumi, Z. Jin, Z. Chen, H. Nishikawa "Fabrication and thermo-mechanical properties of Ag₉In₄ intermetallic compound", *Intermetallics*, 2023, Vol. 162, Article 108028
57. J. Z. Tian, X. F. Cao, T. Sun, J. Fan, H. Miao, Z. Chen, D. Li, E. Z. Liu, Y. H. Zhu "S-scheme Co₃(PO₄)₂/Twinned-Cd_{0.5}Zn_{0.5}S homo-heterojunction for enhanced photocatalytic H₂ evolution", *Chemical Engineering Journal*, 2023, Vol. 471, Article 144587
58. G. X. Yan, A. Bhowmik, V. Gill, C. L. Gan, Z. Chen "The study of Ni-Sn transient liquid phase bonded joints under high temperatures", *Materials Characterization*, 2023, Vol. 203, Article 113099
59. Y. H. Deng, Q. Wang, J. L. Ma, J. T. Oh, Z. Chen "The combined impact of voids and thermal aging on the mechanical reliability of epoxy resin evaluated by statistical analysis", *Polymer Degradation and Stability*, 2023, Vol. 215, Article 110455
60. J. L. Ma, Y. Yang, Q. Wang, Y. H. Deng, M. Yap, W. K. Chern, J. T. Oh, Z. Chen "Degradation and Lifetime Prediction of Composite Epoxy Insulation Materials under High Relative Humidity", *Polymers*, 2023, Vol. 15, Article 2666
61. H. Liu, X. Q. Wang, H. Luo, J. Y. Huang, J. J. Mao, Z. Chen, Y. K. Lai "Transparent Double-layered Antifogging Hydrogel Coating with High Mechanical-resistance and Effective Anti-oil-fouling Ability", *Chemical Engineering Journal*, 2023, Vol. 469, Article 143981
62. X. Z. Ji, J. Y. Huang, L. Teng, S. H. Li, X. Li, W. L. Cai, Z. Chen, Y. K. Lai "Advances in particulate matter filtration: materials, performance, and application", *Green Energy & Environment*, 2023, Vol. 8, pp. 673-697
63. G.-P. Lu, B. R. Wang, Y. Li, Y. M. Lin, J. Hu, Z. Chen, F. Chen "Insights into the route of 5-hydroxymethylfurfural hydrodeoxygenation to 2,5-dimethylfuran over N-doped carbon anchored CoMo bimetallic catalyst", *Applied Catalysis A: General*, 2023, Vol. 661, Article 119240
64. L. X. Zhu, J. H. Luo, S. L. Zheng, S. J. Yang, J. Hu, Z. Chen "Understanding hydrogen diffusion mechanisms in doped σ -Fe through DFT calculations", *International Journal of Hydrogen Energy*, 2023, Vol. 48, pp. 17703-17710
65. X. F. Cao, S. Q. Xing, D. Ma, Y. Tan, Y. C. Zhu, J. Hu, Y. Wang, X. Chen, Z. Chen "Design of High-performance Ion-doped CoP Systems for Hydrogen Evolution: from Multi-level Screening Calculations to Experiment", *Journal of Energy Chemistry*, 2023, Vol. 82, pp. 307-316
66. Y. Y. Guo, S. T. Li, D. Y. Xu, J. X. Han, Z. Q. Xia, S. P. Chen, J. Hu, L. P. Wei, Z. Chen, G. Xie, S. L. Gao, Q. Yang "Charge Redistribution Enhanced Oxygen Reduction of Carbon-based Electrocatalyst", *Applied Surface Science*, 2023, Vol. 627, Article 157303
67. Y. Yang, J. L. Ma, M. Yap, Q. Wang, W. K. Chern, Y. S. E. Foo, Z. Chen "Electrical Properties and Lifetime Prediction of An Epoxy Composite Insulation Material after Hygrothermal Aging", *Polymers*, 2023, Vol. 15, Article 1942
68. L. Yu, Y. P. Sun, Y. S. Niu, P. F. Zhang, J. Hu, Z. Chen, G. Zhang, Y. H. Xu "Microenvironment-Adaptive Nanozyme for Accelerating Drug-Resistant Bacteria-Infected Wound Healing", *Advanced Healthcare Materials*, 2023, Vol. 12, Article 2202596
69. B. C. Ong, Z. Chen, T.-T. Lim, Z. L. Dong "Immobilization of Cobalt-based Polyoxometalates on Titanium Dioxide Nanorod for Enhancement in Photoelectrochemical Water Oxidation", *Materials Chemistry and Physics*, 2023, Vol. 301, Article 127690

70. S. Dong, J. Hu, Z. Qin, H. Li, S. H. Chen, Z. Chen, K. Z. Xu "Design and performance of a novel high-efficiency WO₃-based combustion catalyst and its catalytic mechanism", *Applied Surface Science*, 2023, Vol. 624, Article 157130
71. S. W. Zhuang, N. Duan, L. H. Jiang, F. L. Zhang, J. Hu, Z. Chen, F. Y. Xu "Reaction selectivity-regulation via interfacial reconstruction for preventing hazardous slime generation: Driving mechanism of Pb-based anode with oxygen vacancy-rich MnO₂", *Journal of Cleaner Production*, 2023, Vol. 404, Article 136961
72. S. Y. Zhou, Y. Qu, B. W. Yang, Z. Qiang, J. Wang, Y. M. Lin, Z. Chen, G.-P. Lu "Bio-based tannic acid as a raw material for membrane surface modification", *Desalination*, 2023, Vol. 555, Article 116535
73. X. H. Wu, M. H. Xiao, J. T. Zhang, G. H. Tan, Y. T. Pan, Y. K. Lai, Z. Chen "An Underwater Stable Superhydrophobic Surface for Robust Ultra-long-lasting Biofouling Resistance", *Chemical Engineering Journal*, 2023, Vol. 462, Article 142091
74. H. J. Guo, P. X. Yan, Z. G. Wu, B. Li, F. L. Li, J. Hu, Z. Chen "Lubrication mechanisms of Nb-contained oxides characterizing tribochemistry of NiAl/Nb/Ag composites coatings revealed by the density functional theory (DFT) computation", *Tribology International*, 2023, Vol. 182, Article 108352
75. W.-F. Sun, W. K. Chern, J. C. Y. Chan, Z. Chen "A Reactive Molecular Dynamics Study on Crosslinked Epoxy Resin Decomposition Under High Electric Field and Thermal Aging Conditions", *Polymers*, 2023, Vol. 15, Article 765
76. Y. C. Zhu, X. F. Cao, Y. Tan, Y. Wang, J. Hu, B. T. Li, Z. Chen "Single-Layer MoS₂: A Two-Dimensional Material with Negative Poisson's Ratio", *Coatings*, 2023, Vol. 13, Article 283
77. Z. Q. Li, V. Gill, A. Lambourne, Z. L. Dong, M. Avdeev, J. T. Oh, Z. Chen "Mechanical properties and fractographic analyses of FeCo-2V alloy heat-treated around order-disorder transition temperature", *Journal of Materials Research and Technology*, 2023, Vol. 22, pp. 3302-3310
78. M. Muralles, J. T. Oh, Z. Chen "Influence of V addition on the mechanical properties of FeCo alloys: a molecular dynamics study", *Materialia*, 2023, Vol. 27, Article 101670
79. Y. X. Chen, M. Ma, J. Hu, Z. Chen, P. Jiang, L. Amirav, S. H. Yang, Z. Xing "Coherent nanointerface between light-harvesting and catalytic transition metal sulfides for efficient photochemical conversion", *Applied Catalysis B: Environmental*, 2023, Vol. 324, Article 122300
80. H. Sun, C. Z. Xu, X. T. Yang, L. Tao, Z. Wang, H. T. Zhang, X. Ji, J. J. Ma, L. Liu, Z. W. Tong, Z. Chen "Palladium nanoparticles supported on LDH: A highly efficient and recyclable heterogeneous catalyst for the Heck reaction", *Applied Clay Science*, 2023, Vol. 232, Article 106765
81. Y. G. Lei, K. H. Ng, Y. C. Zhu, Y. Z. Zhang, Z. X. Li, S. Xu, J. Y. Huang, J. Hu, Z. Chen, W. L. Cai, Y. K. Lai "Mo-activated VC as effective cocatalyst for an enhanced photocatalytic hydrogen evolution activity of CdS", *Chemical Engineering Journal*, 2023, Vol. 452, Article 139325
82. S. M. Liu, S. Q. Liu, Q. Wang, Z. Zuo, L. Wei, Z. Chen, X. D. Liang "Improving Surface Performance of Silicone Rubber for Composite Insulators by Multifunctional Nano-coating", *Chemical Engineering Journal*, 2023, Vol. 451, Article 138679
83. X. R. Zang, X. W. Cao, W. W. Zheng, T. X. Zhu, Y. G. Lei, J. Y. Huang, Z. Chen, L. Teng, J. Bian, Y. K. Lai "Meniscus Inspired Flexible Superhydrophobic Coating with Remarkable Erosion Resistance for Pipeline Gas Transmission", *Chemical Engineering Journal*, 2023, Vol. 451, Article 138573
84. X. F. Xu, T. X. Zhu, W. W. Zheng, C. Y. Xian, J. Y. Huang, Z. Chen, W. L. Cai, W. Y. Zhang, Y. K. Lai "A robust and transparent hydrogel coating for sustainable antifogging with excellent self-cleaning and self-healing ability", *Chemical Engineering Journal*, 2023, Vol. 451, Article 137879

2022

85. G. X. Yan, V. Gill, C. L. Gan, Z. Chen "Microstructure and mechanical properties of electroplated Ni-Sn TLP bonded joints with different bonding and aging times", *Materials Characterization*, 2022, Vol. 194, Article 112452
86. M. Hu, H. Y. Hu, Z. H. Ye, S. Q. Tan, K. Yin, Z. Chen, D. B. Guo, H. W. Rong, J. L. Wang, Z. Y. Pan, Z.-T. Hu "A review on turning sewage sludge to value-added energy and materials via thermochemical conversion towards carbon neutrality", *Journal of Cleaner Production*, 2022, Vol. 379, Article 134657
87. Y. X. Zhao, J. Hu, C.-L. Chiang, Y. Li, W. C. Yang, Z. H. Yang, W.-H. Hung, Y.-G. Lin, Z. Chen, B. Li, P. Q. Gao, H. Li "Ruthenium Oxychloride Supported by Manganese Oxide for Stable Oxygen Evolution in Acidic Media", *Journal of Materials Chemistry A*, 2022, Vol. 10, pp. 20964-20974
88. Y. Tan, Y. C. Zhu, X. F. Cao, Y. H. Liu, J. Y. Li, Z. Chen, J. Hu "Discovery of Hydrogen Spillover Based Binary Electrocatalysts for Hydrogen Evolution: from Theory to Experiment", *ACS Catalysis*, 2022, Vol. 12, pp. 11821-11829
89. Y. S. Tay, E. J. R. Phua, Z. Chen, C. L. Gan "Simultaneous enhancement of polymerization kinetics and properties of phthalonitrile using alumina fillers", *ACS Omega*, 2022, Vol. 7, pp. 32996-33003
90. P. Y. Wang, B. Z. Min, L. Wei, X. Y. Chen, Z. Q. Wang, Z. Chen, S. Z. Li "Controlling the condensation of vapor by electric field: A molecular dynamics simulation study", *Applied Surface Science*, 2022, Vol. 605, Article 154805

91. L. X. Liu, Y. M. Ni, J. J. Mao, S. H. Li, K. H. Ng, Z. Chen, J. Y. Huang, W. L. Cai, Y. K. Lai "Flexible and Highly Conductive Textiles Induced by Click Chemistry for Sensitive Motion and Humidity Monitoring", *ACS Applied Materials & Interfaces*, 2022, Vol. 14, pp. 37878-37886
92. Q. Wang, X. F. Yang, X. W. Zhang, X. Chang, M. Yap, Z. Chen, M. F. Ren "Effect of cure cycles on residual stresses in thick composites using multi-physics coupled analysis with multiple constitutive models", *Materials Today Communications*, 2022, Vol. 32, Article 104094
93. Z. Z. Yu, K. Yang, C. L. Yu, K. Q. Lu, W. Y. Huang, L. Xu, L. X. Zou, S. B. Wang, Z. Chen, J. Hu, Y. Hou, Y. F. Zhu "Steering Unit Cell Dipole and Internal Electric Field by Highly Dispersed Er Atoms Embedded into NiO for Efficient CO₂ Photoreduction", *Advanced Functional Materials*, 2022, Vol. 32, Article 2111999
94. Y. M. Ni, L. X. Liu, J. Y. Huang, S. H. Li, Z. Chen, W. Y. Zhang, Y. K. Lai "Rational Designed Microstructure Pressure Sensors with Highly Sensitive and Wide Detection Range Performance", *Journal of Materials Science & Technology*, 2022, Vol. 130, pp. 184-192
95. P. F. Wu, T. Y. Wang, Q. Xue, M. K. Wang, R. H. Zhong, J. Hu, Z. Chen, D. J. Wang, G. L. Xue "Regulating Electronic Structure in Bi₂O₃ Architectures by Ti mediation: A Strategy for Dual Active Sites Synergistically Promoting Photocatalytic Nitrogen Hydrogenation", *ChemSusChem*, 2022, Vol. 15, Article e202200297
96. M. Muralles, J. T. Oh, Z. Chen "Molecular dynamics study of FeCo phase transitions and thermal properties based on an improved 2NN MEAM potential", *Journal of Materials Research and Technology*, 2022, Vol. 19, pp. 1102-1110
97. Y. Sun, R. S. Rawat, Z. Chen "Mechanically Robust Anti-Fingerprint Coating on Polycarbonate Substrate", *Applied Surface Science*, 2022, Vol. 597, Article 153706
98. Z.-T. Hu, Z.-Y. Jin, S.-Y. Gong, X. Z. Wei, J. Zhao, M. Hu, J. Zhao, Z. Chen, Z. Y. Pan, X. N. Li "Supermagnetic Mn-substituted ZnFe₂O₄ in AB-sites hybridization for ultra-effective catalytic degradation of azoxystrobin", *Catalysis Science & Technology*, 2022, Vol. 12, pp. 3137-3147
99. X. L. Yin, S. R. Yu, B. Y. Wang, L. Y. Wang, J. Wang, E. Y. Liu, H. Li, Z. Chen "A durable Ni₃S₂ coated mesh with reversible transition between superhydrophobicity and underwater superoleophobicity for efficient oil-water separation", *Journal of Environmental Chemical Engineering*, 2022, Vol. 10, Article 107890
100. H. R. Devi, O. Y. Bisen, X. Cao, Z. Chen, K. K. Nanda "Design of hierarchical oxide-carbon nanostructures for tri-functional electrocatalytic applications", *Advanced Materials Interfaces*, 2022, Vol. 9, Article 2200071
101. Y. M. Ni, G. Shen, K. H. Ng, T. X. Zhu, S. H. Li, X. Li, W. L. Cai, Z. Chen, J. Y. Huang "Rational construction of superhydrophobic PDMS/PTW@cotton fabric for efficient UV/NIR light shielding", *Cellulose*, 2022, Vol. 29, pp. 4673-4685
102. J. Y. Feng, X. Zhao, B. W. Zhang, Z. Chen, Z. S. Li, Y. Z. Huang "In situ optical spectroscopic understanding of electrochemical passivation mechanism on sol-gel processed WO₃ photoanodes", *Journal of Energy Chemistry*, 2022, Vol. 71, pp. 20-28
103. M.-C. Huang, C.-H. Xue, J. Y. Huang, B.-Y. Liu, X.-J. Guo, Z.-X. Bai, R.-X. Wei, H.-D. Wang, M.-M. Du, S.-T. Jia, Z. Chen, Y. K. Lai "A Hierarchically Structured Self-cleaning Energy-free Polymer Film for Daytime Radiative Cooling", *Chemical Engineering Journal*, 2022, Vol. 442, Article 136239
104. X. H. Wu, K. C. Wang, J. T. Zhang, X. H. Jie, Z. Chen, Y. K. Lai "A Polyester-Silica Anti-condensation Surface with Anti-fouling Property", *Chemical Engineering Journal*, 2022, Vol. 440, Article 135934
105. Z.-T. Hu, W.-H. Xing, S.-Y. Gong, T. L. Sun, C. Wang, M. Hu, J. Zhao, Z. Y. Pan, W. Chen, Z. Chen, X. N. Li "Flower-like ZnIn₂S₄ microspheres with highly efficient catalytic activity for visible-light driven sulfamethoxazole photodegradation", *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 2022, Vol. 643, Article 128779
106. X. F. Cao, Y. Tan, H. A. Zheng, J. Hu, X. Chen, Z. Chen "Effect of cobalt phosphide (CoP) vacancies on its hydrogen evolution activity via water splitting: A theoretical study", *Physical Chemistry Chemical Physics*, 2022, Vol. 24, pp. 4644-4652
107. H. R. Devi, R. Chikkegowda, D. Rangappa, A. K. Yadav, Z. Chen, K. K. Nanda "Trimetallic oxide-hydroxide porous nanosheets for efficient water oxidation", *Chemical Engineering Journal*, 2022, Vol. 435, Article 135019
108. Y. Sun, R. S. Rawat, Z. Chen "A Mechanically Reliable Transparent Antifogging Coating on Polymeric Lenses", *Advanced Materials Interfaces*, 2022, Vol. 9, Article 2101864
109. X. L. Yin, S. R. Yu, L. Y. Wang, J. Wang, B. Y. Wang, H. Li, Z. Chen "Dual-functional underliquid superhydrophobic and superoleophobic stainless steel mesh decorated with Ni₃S₂ nanorods for continuous oil/water separation", *Surface and Coatings Technology*, 2022, Vol. 434, Article 128177
110. Y. B. Liu, X. F. Cao, J. K. Shi, B. B. Shen, J. Y. Huang, J. Hu, Z. Chen, Y. K. Lai "A superhydrophobic TPU/CNTs@SiO₂ coating with excellent mechanical durability and chemical stability for sustainable anti-fouling and anti-corrosion", *Chemical Engineering Journal*, 2022, Vol. 434, Article 134605
111. H. R. Devi, O. Y. Bisen, Z. Chen, K. K. Nanda "Spatially dispersed one-dimensional carbon architecture on oxide framework for oxygen electrochemistry", *Chemical Engineering Journal*, 2022, Vol. 433, Article 133649
112. H. Liu, L. Zhang, J. Y. Huang, X. L. Zhang, J. J. Mao, Z. Chen, Q. H. Mao, M. Z. Ge, Y. K. Lai "Superwetting patterned PDMS/PMMA materials by facile one-step electro-spraying for signal expression and liquid transportation", *Chemical Engineering Journal*, 2022, Vol. 431, Article 133206

- 113.H. R. Devi, B. C. Ong, X. Zhao, Z. L. Dong, K. K. Nanda, Z. Chen “Insights into improving photoelectrochemical water splitting performance using hematite anode”, *Energy Technology*, 2022, Vol. 10, Article 2100457
- 114.H. Liu, L. Zhang, J. Y. Huang, J. J. Mao, Z. Chen, Q. H. Mao, M. Z. Ge, Y. K. Lai “Smart surfaces with reversibly switchable wettability: Concepts, synthesis and applications”, *Advances in Colloid and Interface Science*, 2022, Vol. 300, Article 102584
- 115.Y. Sun, R. S. Rawat, Z. Chen “Mechanically Robust Multifunctional Antifogging Coating on Transparent Plastic Substrates”, *Applied Surface Science*, 2022, Vol. 580, Article 152307
- 116.Z. Q. Wang, P. Y. Wang, H. Song, Z. Chen “Dynamic wetting behavior of nanofluid droplet on a vertically vibrating surface: A molecular dynamics study”, *Journal of Molecular Liquids*, 2022, Vol. 347, Article 118360
- 117.J. K. Shi, B. Z. Zhang, X. Zhou, R. X. Liu, J. Hu, H. A. Zheng, Z. Chen “An abrasion resistant TPU/SH-SiO₂ superhydrophobic coating for anti-icing and anti-corrosion applications”, *Journal of Renewable Materials*, 2022, Vol. 10, pp. 1239-1255
- 118.J. M. Rui, J. Li, Y. J. Li, H. L. Liu, Y. H. Zhang, J. Huang, P. L. Ma, Z. Chen “Preparation of C-SiC/ZrSi_xO_yC_z core-shell fibers by coaxial electrospinning and the high-temperature performance”, *Ceramics International*, 2022, Vol. 48, pp. 2625-2631
- 119.V. G. D. Kumar, K.R. Balaji, R. Viswanatha, G. Ambika, R. Roopa, B. M. Basavaraja, M. Chennabasappa, C. R. R. Kumar, Z. Chen, B. X. Thanh, M. S. Santosh “Visible Light Photodegradation of 2,4-Dichlorophenol Using Nanostructured NaBiS₂: Kinetics, Cytotoxicity, Antimicrobial and Electrochemical Studies of the Photocatalyst”, *Chemosphere*, 2022, Vol. 287, Article 132174
- 120.W. W. Zheng, L. Teng, Y. K. Lai, T. X. Zhu, S. H. Li, X. W. Wu, W. L. Cai, Z. Chen, J. Y. Huang “Magnetic Responsive and Flexible Composite Superhydrophobic Photothermal Film for Passive Anti-icing/Active Deicing”, *Chemical Engineering Journal*, 2022, Vol. 427, Article 130922

2021

- 121.Y. M. Ni, J. Y. Huang, S. H. Li, X. L. Dong, T. X. Zhu, W. L. Cai, Z. Chen, Y. K. Lai “Robust superhydrophobic rGO/PPy/PDMS coatings on polyurethane sponge for underwater pressure and temperature sensing”, *ACS Applied Materials & Interfaces*, 2021, Vol. 13, pp. 53271-53281
- 122.X. F. Cao, Y. Z. Zhang, W. Hu, H. A. Zheng, Y. Dan, J. Hu, Z. Chen “Preparation of superhydrophobic nanoplate iron oxide surface on a carbon steel for anti-wetting applications”, *Materials & Design*, 2021, Vol. 211, Article 110169
- 123.B. W. Zhang, C. J. Li, J. Hu, D. D. Peng, K. Huang, J. S. Wu, Z. Chen, Y. Z. Huang “Cobalt tungsten phosphide with tunable W-doping as highly efficient electrocatalysts for hydrogen evolution reaction”, *Nano Research*, 2021, Vol. 14, pp. 4073-4078
- 124.C. Pratapkumar, S. C. Prashantha, V.G. D. Kumar, M. S. Santosh, C. R. Ravikumar, M. R. Anilkumar, T. S. Shashidhara, C. N. Swamy, A.A. Jahagirdar, M. W. Alam, Z. Chen, X.-T. Bui “Structural, photocatalytic and electrochemical studies on facile combustion synthesized low-cost nano Chromium (III) doped polycrystalline magnesium aluminate spinels”, *Journal of Science: Advanced Materials and Devices*, 2021, Vol. 6, pp. 462-471
- 125.Z. Q. Li, V. Gill, Y. N. Wang, A. Lambourne, J. T. Oh, Z. Chen “Effect of laminate cutting and annealing treatment on the magnetic properties of Fe₄₉Co₄₉V₂ alloy”, *IEEE Transactions on Magnetics*, 2021, Vol. 57, Article 2000813
- 126.X. W. Xie, S. H. Li, X. Q. Wang, J. Y. Huang, Z. Chen, W. L. Cai, Y. K. Lai “An effective and low-consumption foam finishing strategy for robust functional fabrics with on-demand special wettability”, *Chemical Engineering Journal*, 2021, Vol. 426, Article 131245
- 127.V. G. Dileepkumar, C. Pratapkumar, R. Viswanatha, B. M. Basavaraja, R. R. Maphanga, M. Chennabasappa, N. Srinivasa, S. Ashoka, Z. Chen, S. Rtimi, K. Jayaramulu, R. S. Varma, G. Szekely, M. S. Santosh “Nanostructured NaFeS₂ as a Cost-Effective and Robust Electrocatalyst for Hydrogen and Oxygen Evolution with Reduced Overpotentials”, *Chemical Engineering Journal*, 2021, Vol. 426, Article 131315
- 128.J. S. J. Tan, C. H. Wong, Z. Chen “Janus particle preparation through UV-induced partial photodegradation of spin-coated particle films”, *Langmuir*, 2021, Vol. 37, pp. 8167-8176
- 129.M. Y. Wang, J. Y. Huang, S. H. Li, Y. M. Ni, X. L. Dong, X. Q. Wang, Z. Chen, X. Li, W. L. Cai, Y. K. Lai “A Sandwich-like Structured Superhydrophobic Fabric for Versatile and Highly Efficient Emulsion Separation”, *Separation and Purification Technology*, 2021, Vol. 275, Article 119253
- 130.Y. Cheng, S. N. Zhang, S. K. Liu, J. Y. Huang, Z. B. Zhang, X. D. Wang, Z. H. Yu, S. H. Li, Z. Chen, Y. Zhao, Y. K. Lai, X. M. Qian, C. F. Xiao “Fog catcher brushes with environmental friendly slippery alumina micro-needle structured surface for efficient fog-harvesting”, *Journal of Cleaner Production*, 2021, Vol. 315, Article 127862
- 131.S. L. Zheng, C. Li, Y. P. Zhang, T. F. Xiang, Y. Cao, Q. L. Li, Z. Chen “A general strategy towards superhydrophobic self-cleaning and anti-corrosion metallic surfaces: An example with aluminum alloy”, *Coatings*, 2021, Vol. 11, Article 788

- 132.H. L. Liu, J. Y. Chen, W. J. Yuan, C. F. Jiang, H. Y. Li, J. Li, Y. J. Li, B. Zhang, Z. Chen "Structure engineering of Fe-based MOF aerogel by Halloysite nanotubes for efficient methylene blue adsorption", *Journal of Sol-Gel Science and Technology*, 2021, Vol. 99, pp. 55-62
- 133.X. W. Wu, S. H. Li, J. Y. Huang, Z. Chen, W. L. Cai, Y. K. Lai "Solar-assisted Isotropically Thermoconductive Sponge for Highly Viscous Crude Oil Spill Remediation", *iScience*, 2021, Vol. 24, Article 102665
- 134.J. Y. Li, J. Hu, M. K. Zhang, W. Y. Gou, S. Zhang, Z. Chen, Y. Q. Qu, Y. Y. Ma "A fundamental viewpoint on the hydrogen spillover phenomenon of electrocatalytic hydrogen evolution", *Nature Communications*, 2021, Vol. 12, Article 3502
- 135.S. J. He, J. K. Shi, J. Y. Huang, J. Hu, Y. K. Lai, Z. Chen "Rational designed structured superhydrophobic iron oxide surface towards sustainable anti-corrosion and self-cleaning", *Chemical Engineering Journal*, 2021, Vol. 416, Article 127768
- 136.Z. Q. Xia, X. Jia, X. Ge, C. T. Ren, Q. Yang, J. Hu, Z. Chen, J. Han, G. Xie, S. P. Chen, S. L. Gao "Tailoring electronic structure and size of ultrastable M-MOFs (M = Co, Ni) with enhanced electroconductivity for high-performance supercapacitors", *Angewandte Chemie International Edition*, 2021, Vol. 60, pp. 10228-10238
- 137.H. L. Liu, P. Wang, B. Zhang, H. Y. Li, J. Li, Y. J. Li, Z. Chen "Morphology controlled carbon aerogel with enhanced thermal insulation and mechanical properties: a simple route for the regulated synthesis", *Journal of Non-Crystalline Solids*, 2021, Vol. 564, Article 120828
- 138.T. Rui, G.-P. Lu, X. Zhao, X. Cao, Z. Chen "The Synergistic Catalysis on Co Nanoparticles and CoN_x Sites of Aniline-modified ZIF Derived Co@NCs for Oxidative Esterification of HMF", *Chinese Chemical Letters*, 2021, Vol. 32, pp. 685-690
- 139.Y. P. Tian, B. W. Que, Y. Y. Luo, M. M. Ju, Y. Tang, X. J. Lou, Z. Chen, W. X. Que "Amino-rich surface-modified MXene as anode for hybrid aqueous proton supercapacitors with superior volumetric capacity", *Journal of Power Sources*, 2021, Vol. 495, Article 229790
- 140.H. L. Liu, L. T. Zhang, J. Li, H. Y. Li, G. Q. An, Y. J. Li, Z. Chen "Structure and Mechanical Properties of HNTs/SiBCN Ceramic Hybrid Aerogels", *Ceramics International*, 2021, Vol. 47, pp. 9083-9089
- 141.Y.-Y. Quan, Z. Chen, Y. K. Lai, Z.-S. Huang, H. Q. Li "Recent advances in fabricating durable superhydrophobic surfaces: a review from the aspects of structures and materials", *Materials Chemistry Frontiers*, 2021, Vol. 5, pp. 1655-1682
- 142.X. L. Dong, S. W. Gao, S. H. Li, T. X. Zhu, J. Y. Huang, Z. Chen, Y. K. Lai "Bioinspired structural and functional designs towards interfacial solar steam generation for clean water production", *Materials Chemistry Frontiers*, 2021, Vol. 5, pp. 1510-1524
- 143.T. Y. Wang, C. T. Feng, J. Q. Liu, D. J. Wang, H. M. Hu, J. Hu, Z. Chen, G. L. Xue "Bi₂WO₆ hollow microspheres with high specific surface area and oxygen vacancies for efficient photocatalysis N₂ fixation", *Chemical Engineering Journal*, 2021, Vol. 414, Article 128827
- 144.M. Q. Yao, J. Y. Ge, B. L. Sun, J. Hu, S. W. Koh, Y. X. Zhao, J. P. Fei, Z. X. Sun, W. Hong, Z. Chen, W. C. Hu, H. Li "Solar-driven hydrogen generation coupled with urea electrolysis by an oxygen vacancy-rich catalyst", *Chemical Engineering Journal*, 2021, Vol. 414, Article 128753
- 145.H. L. Liu, B. Gao, W. J. Yuan, H. Y. Li, J. Li, Y. J. Li, B. Zhang, Z. Chen "Modification of graphene aerogel with titania nanotubes for efficient methylene blue adsorption kinetics", *Journal of Sol-Gel Science and Technology*, 2021, Vol. 97, pp. 271-280
- 146.X. H. Wu, F. Yang, G. P. Lu, X. Zhao, Z. Chen, S. Z. Qian "A Breathable and Environmentally Friendly Superhydrophobic Coating for Anti-condensation Applications", *Chemical Engineering Journal*, 2021, Vol. 412, Article 128725
- 147.H. L. Liu, P. Wang, B. Zhang, H. Y. Li, J. Li, Y. J. Li, Z. Chen "Enhanced thermal shrinkage behavior of phenolic-derived carbon aerogel-reinforced by HNTs with superior compressive strength performance", *Ceramics International*, 2021, Vol. 47, pp. 6487-6495
- 148.J. N. Dong, X. N. Zhan, J. Y. Huang, J. Hu, Z. Chen, Y. K. Lai "In-situ formation of unsaturated defect sites on converted CoNi alloy/Co-Ni LDH to activate MoS₂ nanosheets for pH-universal hydrogen evolution reaction", *Chemical Engineering Journal*, 2021, Vol. 412, Article 128556
- 149.Y. M. Ni, J. Y. Huang, S. H. Li, X. Q. Wang, L. X. Liu, M. Y. Wang, Z. Chen, X. Li, Y. K. Lai "Underwater, Multifunctional Superhydrophobic Sensor for Human Motion Detection", *ACS Applied Materials & Interfaces*, 2021, Vol. 13, pp. 4740-4749
- 150.W. W. Zheng, J. Y. Huang, S. H. Li, M. Z. Ge, L. Teng, Z. Chen, Y. K. Lai "Advanced Materials with Special Wettability toward Intelligent Oily Wastewater Remediation", *ACS Applied Materials & Interfaces*, 2021, Vol. 13, pp. 67-87
- 151.X. Q. Wang, S. H. Li, J. Y. Huang, J. J. Mao, Y. Cheng, L. Teng, Z. Chen, Y. K. Lai "A multifunctional and environmentally-friendly method to fabricate superhydrophilic and self-healing coatings for sustainable antifogging", *Chemical Engineering Journal*, 2021, Vol. 409, Article 128228
- 152.Y. Bian, J. J. Ni, C. Wang, J. M. Zhen, H. G. Hao, X. J. Kong, H. Chen, J. Li, X. Q. Li, Z. F. Jia, W. Luo, Z. Chen "Microstructure and wear characteristics of in-situ micro/nanoscale niobium carbide reinforced copper composites fabricated through powder metallurgy", *Materials Characterization*, 2021, Vol. 172, Article 110847

153. X. W. Wu, Y. G. Lei, S. H. Li, J. Y. Huang, L. Teng, Z. Chen, Y. K. Lai "Photothermal and Joule heating-assisted thermal management sponge for efficient cleanup of highly viscous crude oil", *Journal of Hazardous Materials*, 2021, Vol. 403, Article 124090
154. Y. Xie, F. Guo, J. J. Mao, J. Y. Huang, Z. Chen, Y. X. Jian, Y. K. Lai "Freestanding MoS₂@carbonized cellulose aerogel derived from waste cotton for sustainable and highly efficient particulate matter capturing", *Separation and Purification Technology*, 2021, Vol. 254, Article 117571
155. Z. H. Yu, H. M. Zhang, J. Y. Huang, S. H. Li, S. N. Zhang, Y. Cheng, J. J. Mao, X. L. Dong, S. W. Gao, S. C. Wang, Z. Chen, Y. X. Jiang, Y. K. Lai "Namib desert beetle inspired special patterned fabric with programmable and gradient wettability for efficient fog harvesting", *Journal of Materials Science & Technology*, 2021, Vol. 61, pp. 85-92

2020

156. J. Y. Feng, X. Zhao, B. W. Zhang, G. Yang, Q. F. Qian, S. S. K. Ma, Z. Chen, Z. S. Li, Y. Z. Huang "Sol-gel synthesis of highly reproducible WO₃ photoanodes for solar water oxidation", *Science China Materials*, 2020, Vol. 63, pp. 2261-2271
157. Y. T. Zhang, J. Li, H. L. Liu, Y. J. Li, J. M. Rui, H. P. Da, Z. Chen "Microencapsulated phase change materials composited Al₂O₃-SiO₂ aerogel and the thermal regulation properties", *Journal of Sol-Gel Science and Technology*, 2020, Vol. 96, pp. 627-635
158. X. H. Wu, Y. Z. Shen, S. L. Zheng, Z.-T. Hu, Z. Chen "Clarifying the Correlation of Ice Adhesion Strength with Water Wettability and Surface Characteristics", *Langmuir*, 2020, Vol. 36, pp. 12190-12201
159. N. S. Nobeen, G. X. Yan, C. L. Gan, Z. Chen "Ag-Sn transient liquid phase bonding for high temperature electronic packaging: effect of Ag content", *IEEE Transactions on Components, Packaging and Manufacturing Technology*, 2020, Vol. 10, pp. 1604-1610
160. D. A. Bellido-Aguilar, S. L. Zheng, Y. J. Huang, Y. Sun, X. T. Zeng, Q. C. Zhang, Z. Chen "Hydrophobization of fully bio-based epoxy polymers using water as solvent: effect of additives", *European Polymer Journal*, 2020, Vol. 140, Article 110043
161. J. Hu, X. Zhao, W. Chen, S. L. Zhang, Z. Chen "Mechanistic study of monolayer NiP₂ (100) towards solar hydrogen production", *Solar RRL*, 2020, Vol. 4, Article 1900360
162. N. Agrawal, P. S. J. Low, J. S. J. Tan, E. W. M. Fong, Y. K. Lai, Z. Chen "Durable easy-cleaning and antibacterial cotton fabrics using fluorine-free silane coupling agents and CuO nanoparticles", *Nano Materials Science*, 2020, Vol. 2, pp. 281-291
163. B. Ji, G. X. Yan, W. F. Zhao, X. Zhao, J. J. Ni, J. L. Duan, Z. Chen, Z. Yang "Titanium mesh-supported TiO₂ nano-film for the photocatalytic degradation of ethylene under a UV-LED", *Ceramics International*, 2020, Vol. 46, pp. 20830-20837
164. J. Liu, X. T. Yin, Y. X. Guo, M. D. Que, J. Chen, Z. Chen, W. X. Que "Influences of Hole Transport Layer/Perovskite Interface on Hysteresis Behavior of Inverted Perovskite Solar Cells", *ACS Applied Energy Materials*, 2020, Vol. 3, pp. 6391-6399
165. B. R. Zhao, P. Liu, S. Li, H. F. Shi, X. Z. Jia, Q. Q. Wang, F. Yang, Z. W. Song, C. Guo, J. Hu, Z. Chen, X. L. Yan, X. X. Ma "Bimetallic Ni-Co nanoparticles on SiO₂ as robust catalyst for CO methanation: Effect of homogeneity of Ni-Co alloy", *Applied Catalysis B: Environmental*, 2020, Vol. 278, Article 119307
166. Y. Sun, B. Ouyang, R. S. Rawat, Z. Chen "Rapid and stable plasma transformation of polyester fabrics for highly efficient oil-water separation", *Global Challenges*, 2020, Vol. 4, Article 1900095
167. J. J. Ma, S. S. Zhang, L. Liu, C. H. Zhang, C. Shen, J. D. Zhou, H. Cheng, Y. T. Ge, Z. W. Tong, Z. Chen, B. Zhang "Immobilization of well-dispersed Ag nanoparticles on calcium niobate nanosheets as highly active catalyst towards reduction of 4-nitrophenol", *Journal of the Taiwan Institute of Chemical Engineers*, 2020, Vol. 110, pp. 92-99
168. T. X. Zhu, Y. Cheng, J. Y. Huang, J. Q. Xiong, M. Z. Ge, J. J. Mao, Z. K. Liu, X. L. Dong, Z. Chen, Y. K. Lai "A transparent superhydrophobic coating with mechanochemical robustness for anti-icing, photocatalysis and self-cleaning", *Chemical Engineering Journal*, 2020, Vol. 399, Article 125746
169. Z.-T. Hu, J.-W. Liu, J. Zhao, Y. Ding, Z. Y. Jin, J. H. Chen, Q. Z. Dai, B. J. Pan, Z. Chen, J. M. Chen, "Enhanced BiFeO₃/Bi₂Fe₄O₉/H₂O₂ Heterogeneous System for Sulfamethoxazole Decontamination: System Optimization and Degradation Pathways", *Journal of Colloid and Interface Science*, 2020, Vol. 577, pp. 54-65
170. Z. Q. Li, Z. Chen, J. T. Oh, Z. J. Wang, F. Li, A. Lambourne "Effect of punching edge deformation on the magnetic properties of Fe₄₉-Co₄₉-V₂ alloy", *Journal of Magnetism and Magnetic Materials*, 2020, Vol. 510, Article 166978
171. V. G. Dileepkumar, P. S. Surya, C. Pratapkumar, R. Viswanatha, C. R. Ravikumar, M. R. A. Kumar, H. B. Muralidhara, I. M. Al-Akraa, A. M. Mohammad, Z. Chen, B. X. Thanh, M. S. Santosh "NaFeS₂ as a new photocatalytic material for the degradation of industrial dyes", *Journal of Environmental Chemical Engineering*, 2020, Vol. 8, Article 104005
172. K. Y. Zhao, J. Y. Huang, J. J. Mao, Z. W. Bao, Z. Chen, Y. K. Lai "Charged graphene aerogel filter enabled superior particulate matter removal efficiency in harsh environment", *Chemical Engineering Journal*, 2020, Vol. 395, Article 125086

- 173.J. Li, H. L. Liu, Y. T. Zhang, Y. J. Li, D. L. Qi, Z. Chen "Facile fabrication of Fe-doped Si-C-N ceramic microspheres with flower-like morphology and the infrared extinction property", *Journal of Sol-Gel Science and Technology*, 2020, Vol. 94, pp. 461-467
- 174.J. Li, Y. T. Zhang, Z. B. Zhang, H. L. Liu, J. M. Rui, Y. J. Li, Z. Chen "Preparation of phase change microcapsules-aerogels composites and the enhanced thermal properties", *Materials Letters*, 2020, Vol. 268, Article 127563
- 175.G. Q. An, H. L. Liu, H. Y. Li, Z. Chen, Jing Li, Y. J. Li "SiBCN ceramic aerogel/graphene composites prepared via sol-gel infiltration process and polymer-derived ceramics (PDCs) route", *Ceramics International*, 2020, Vol. 46, pp. 7001-7008
- 176.J. S. J. Tan, S. L. Y. Wong, Z. Chen "Preparation of Janus titanium dioxide particles via ultraviolet irradiation of Pickering emulsions", *Advanced Materials Interfaces*, 2020, Vol. 7, Article 1901961
- 177.Z. X. Wang, J. Y. Huang, J. J. Mao, Q. Guo, Z. Chen, Y. K. Lai "Metal-Organic Framework/Graphene Composites: Preparation and Applications in Electrocatalysis and Photocatalysis", *Journal of Materials Chemistry A*, 2020, Vol. 8, pp. 2934-2961
- 178.J. S. J. Tan, X. Cao, Y. Z. Huang, Z. Chen "Janus-like particles prepared through partial UV irradiation at the water/oil interface and their encapsulation capabilities", *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 2020, Vol. 589, Article 124460
- 179.Y. M. Lin, G.-P. Lu, X. Zhao, X. Cao, L. L. Yang, B. J. Zhou, Q. Zhong, Z. Chen "Porous cobalt@N-doped carbon derived from chitosan for oxidative esterification of 5-Hydroxymethylfurfural: The roles of zinc in the synthetic and catalytic process", *Molecular Catalysis*, 2020, Vol. 482, Article 110695
- 180.X. F. Cao, X. Zhao, J. Hu, Z. Chen "First-principles investigation of electronic properties of Bi₂O₄ (101)/BiVO₄ (010) heterojunction towards more efficient solar water splitting", *Physical Chemistry Chemical Physics*, 2020, Vol. 22, pp. 2449-2456
- 181.Z. Q. Li, H. W. Ni, Z. Chen, J. J. Ni, R. S. Chen, X. A. Fan, Y. Li, Y. B. Yuan "Enhanced Tensile Properties and Corrosion Resistance of Stainless Steel with Copper-coated Graphene Fillers", *Journal of Materials Research and Technology*, 2020, Vol. 9, pp. 404-412
- 182.H. Liu, C. Y. Cao, J. Y. Huang, Z. Chen, G. Q. Chen, Y. K. Lai "Progress on particulate matter filtration technology: Basic concepts, advanced materials, and performances", *Nanoscale*, 2020, Vol. 12, pp. 437-453
- 183.T. X. Zhu, Y. Cheng, C. Y. Cao, J. J. Mao, L. Q. Li, J. Y. Huang, S. W. Gao, X. L. Dong, Z. Chen, Y. K. Lai "A semi-interpenetrating network ionic hydrogel for strain sensing with high sensitivity, large strain range, and stable cycle performance", *Chemical Engineering Journal*, 2020, Vol. 385, Article 123912
- 184.M. A. Khan, M. Mujahid, Z. Chen, F. A. Kiani, S. C. J. Loo, Y. G. J. Lim "An Experimental and Theoretical Approach to Investigate Correlation between Electromagnetic Properties of Doped Ferrites & Its Interfacial Reactivity with Dopamine", *Applied Surface Science*, 2020, Vol. 506, Article 144945
- 185.W. Chen, R.-Q. Yan, J.-Q. Zhu, G.-B. Huang, Z. Chen "Highly efficient visible-light-driven photocatalytic hydrogen evolution by all-solid-state Z-scheme CdS/QDs/ZnIn₂S₄ architectures with MoS₂ quantum dots as solid-state electron mediator", *Applied Surface Science*, 2020, Vol. 504, Article 144406
- 186.M. Dahanayaka, R. Babicheva, Z. Chen, A. W.-K. Law, M. S. Wu, K. Zhou "Atomistic Simulation Study of GO/HKUST-1 MOF Membranes for Seawater Desalination via Pervaporation", *Applied Surface Science*, 2020, Vol. 503, Article 144198
- 187.X. Zhao, Z. Zhang, X. Cao, J. Hu, X. H. Wu, A. Y. R. Ng, G.-P. Lu, Z. Chen "Elucidating the Sources of Activity and Stability of FeP Electrocatalyst for Hydrogen Evolution Reactions in Acidic and Alkaline Media", *Applied Catalysis B: Environmental*, 2020, Vol. 260, Article 118156

2019

- 188.H. L. Liu, C. F. Jiang, H. Y. Li, Z. Chen "Preparation of FeBTC/silica aerogels by a co-sol-gel process for organic pollutant adsorption", *Materials Research Express*, 2019, Vol. 6, Article 1250g7
- 189.D. A. Bellido-Aguilar, S. L. Zheng, Y. J. Huang, X. T. Zeng, Q. C. Zhang, Z. Chen "Solvent-free synthesis and hydrophobization of bio-based epoxy coatings for anti-icing and anticorrosion applications", *ACS Sustainable Chemistry & Engineering*, 2019, Vol. 7, pp. 19131-19141
- 190.J. Y. Huang, H. Yang, J. J. Mao, F. Guo, Y. Cheng, Z. Chen, X. Q. Wang, X. Li, Y. K. Lai "Rapid and controllable design of robust superwetable microchips by click reaction for efficient o-phthalaldehydes and glucose detection", *ACS Biomaterials Science & Engineering*, 2019, Vol. 5, pp. 6186-6195
- 191.S. L. Zheng, D. A. Bellido-Aguilar, J. Hu, Y. J. Huang, X. Zhao, Z. Wang, X. T. Zeng, Q. C. Zhang, Z. Chen "Waterborne bio-based epoxy coatings for the corrosion protection of metallic substrates", *Progress in Organic Coatings*, 2019, Vol. 136, Article 105265
- 192.X. Yao, X. Zhao, J. Hu, H. Q. Xie, D. P. Wang, X. Cao, Z. Zhang, Y. Z. Huang, Z. Chen, T. Sritharan "The Self-Passivation Mechanism in Degradation of BiVO₄ Photoanode", *iScience*, 2019, Vol. 19, pp. 976-985
- 193.T. X. Zhu, J. J. Mao, Y. Cheng, H. R. Liu, L. Lv, M. Z. Ge, S. H. Li, J. Y. Huang, Z. Chen, H. Q. Li, L. Yang, Y. K. Lai "Recent progress of polysaccharide-based hydrogel interfaces for wound healing and tissue engineering", *Advanced Materials Interfaces*, 2019, Vol. 6, Article 1900761

- 194.H. Wang, K. Jin, C. Wang, X. Z. Guo, Z. Chen, J. Tao “Effect of fiber surface functionalization on shear behavior at carbon fiber/epoxy interface through molecular dynamics analysis”, *Composites Part A: Applied Science and Manufacturing*, 2019, Vol. 126, Article 105611
- 195.B. Q. Chen, Z. Chen, Z. H. Du, G. F. Zhang “Application of AlMgGaLi foil for joining copper to SiCp/Al-MMCs for high-temperature and high-power electronics”, *Applied Physics A*, 2019, Vol. 125, Article 581
- 196.S. W. Gao, X. L. Dong, J. Y. Huang, J. N. Dong, F. D. Maggio, S. C. Wang, F. Guo, T. X. Zhu, Z. Chen, Y. K. Lai “Bioinspired soot-deposited Janus fabrics for sustainable solar steam generation with salt-rejection”, *Global Challenges*, 2019, Vol. 3, Article 1800117
- 197.H. Liu, J. Y. Huang, J. J. Mao, Z. Chen, G. Q. Chen, Y. K. Lai “Transparent antibacterial nanofiber air filters with highly efficient moisture resistance for sustainable particulate matter capture”, *iScience*, 2019, Vol. 19, pp. 214-223
- 198.Y. J. Huang, Z. R. Wang, Z. Chen, Q. C. Zhang “Organic Cocrystals: Beyond Electrical Conductivities and Field-Effect Transistors (FETs)”, *Angewandte Chemie International Edition*, 2019, Vol. 58, pp. 9696-9711
- 199.J. J. Mao, S. H. Li, C. L. He, Y. X. Tang, Z. Chen, J. Y. Huang, Y. K. Lai “Robust amphiprotic Konjac Glucomannan Cross-linked Chitosan Aerogels for Efficient Water Remediation”, *Cellulose*, 2019, Vol. 26, pp. 6785-6796
- 200.J. Hu, X. F. Cao, X. Zhao, W. Chen, G.-P. Lu, Y. Dan, Z. Chen “Catalytically Active Sites on Ni₅P₄ for Efficient Hydrogen Evolution Reaction from Atomic Scale Calculation”, *Frontiers in Chemistry*, 2019, Vol. 7, Article 444
- 201.J. Hu, W. Chen, X. Zhao, X. F. Cao, J. B. Zhu, Z. Chen “Stable Active Sites on Ni₁₂P₅ Surfaces for the Hydrogen Evolution Reaction”, *Energy Technology*, 2019, Vol. 7, Article 1900013
- 202.N. Agrawal, J. S. J. Tan, P. S. J. Low, E. W. M. Fong, Y. K. Lai, Z. Chen “Green synthesis of robust superhydrophobic antibacterial and UV blocking cotton fabrics by dual stage silanization approach”, *Advanced Materials Interfaces*, 2019, Vol. 6, Article 1900032
- 203.J. J. Mao, Y. X. Tang, Y. D. Wang, J. Y. Huang, X. L. Dong, Z. Chen, Y. K. Lai “Particulate Matter Capturing via Naturally Dried ZIF-8/Graphene Aerogels under Harsh Conditions”, *iScience*, 2019, Vol. 16, pp. 133-144
- 204.L. Y. Jiang, X. Cao, J. M. Chen, H. Q. Guo, Z. Chen, S. Li “Removal of Chlorobenzene Using a Sequential Adsorption-plasma Catalytic System over Ag, Ce, Mn-Modified Activated Carbon Catalysts”, *Journal of Chemical Technology and Biotechnology*, 2019, Vol. 94, pp. 1788-1799
- 205.J. Hu, S. Zhao, X. Zhao, Z. Chen “Strategies of Anode Materials Design towards Improved Photoelectrochemical Water Splitting Efficiency”, *Coatings*, 2019, Vol. 9, Article 309
- 206.J. S. J. Tan, Z. Chen “Mask-less preparation of Janus particles through ultraviolet irradiation on hydrophobic particles assembled at the air-water interface”, *Journal of Colloid and Interface Science*, 2019, Vol. 546, pp. 285-292
- 207.Y. Z. Shen, X. H. Wu, J. Tao, C. L. Zhu, Y. K. Lai, Z. Chen “Icephobic materials: fundamentals, performance evaluation, and applications”, *Progress in Materials Science*, 2019, Vol. 103, pp. 509-577
- 208.X. Yao, X. Zhao, X. L. Li, D. P. Wang, A. I. Y. Tok, Z. Chen, T. Sritharan “A Source of Error in Photoanode Evaluation”, *Joule*, 2019, Vol. 3, pp. 305-310
- 209.V. G. Petrov, Z. Chen, A. Y. Romanchuk, V. O. Demina, Y. X. Tang, S. N. Kalmykov “Sorption of Eu (III) onto nano-sized H-titanates of different structure”, *Applied Sciences*, 2019, Vol. 9, Article 697
- 210.S. L. Zheng, D. A. Bellido-Aguilar, Y. J. Huang, X. T. Zeng, Q. C. Zhang, Z. Chen “Mechanically robust hydrophobic bio-based epoxy coatings for anti-corrosion application”, *Surface and Coatings Technology*, 2019, Vol. 363, pp. 43-50
- 211.D. A. Bellido-Aguilar, S. L. Zheng, X. J. Zhan, Y. J. Huang, X. Zhao, X. T. Zeng, P. K. Pallathadka, Q. C. Zhang, Z. Chen “Effect of a fluoroalkyl-functional curing agent on the wettability, thermal and mechanical properties of hydrophobic biobased epoxy coatings”, *Surface and Coatings Technology*, 2019, Vol. 362, pp. 274-281
- 212.L. K.-S. Ng, E. J.-C. Tan, T. W. Goh, X. Zhao, Z. Chen, T. C. Sum, H. S. Soo “Mesoporous SiO₂/BiVO₄/CuO_x Nanospheres for Z-Scheme, Visible Light Aerobic C-N Coupling and Dehydrogenation”, *Applied Materials Today*, 2019, Vol. 15, pp. 192-202
- 213.X. L. Dong, S. W. Gao, J. Y. Huang, S. H. Li, T. X. Zhu, Y. Cheng, Y. Zhao, Z. Chen, Y. K. Lai “A self-roughened and biodegradable superhydrophobic coating with UV shielding, solar-induced self-healing and versatile oil-water separation ability”, *Journal of Materials Chemistry A*, 2019, Vol. 7, pp. 2122-2128
- 214.Y. J. Huang, J. Xing, Q. Y. Gong, L. C. Chen, G. F. Liu, C. J. Yao, Z. R. Wang, H. L. Zhang, Z. Chen, Q. C. Zhang “Reducing Aggregation Caused Quenching Effect through Co-Assembly of PAH Chromophores and Molecular Barriers”, *Nature Communications*, 2019, Vol. 10, Article 169
- 215.S. L. Zheng, D. A. Bellido-Aguilar, X. H. Wu, X. J. Zhan, Y. J. Huang, X. T. Zeng, Q. C. Zhang, Z. Chen “Durable Waterborne Hydrophobic Bio-Epoxy Coating with Improved Anti-Icing and Self-Cleaning Performance”, *ACS Sustainable Chemistry & Engineering*, 2019, Vol. 7, pp. 641-649

- 216.J. Hu, S. J. He, Z. Wang, J. B. Zhu, L. P. Wei, Z. Chen “Stearic acid-coated superhydrophobic Fe₂O₃/Fe₃O₄ composite film on N80 steel for corrosion protection”, *Surface and Coatings Technology*, 2019, Vol. 359, pp. 47-54
- 217.S. N. Zhang, J. Y. Huang, Z. Chen, S. Yang, Y. K. Lai “Liquid Mobility on Super-wettable Surfaces for Applications in Energy and Environment”, *Journal of Materials Chemistry A*, 2019, Vol. 7, pp. 38-63
- 218.X. H. Wu, V. V. Silberschmidt, Z.-T. Hu, Z. Chen “When superhydrophobic coatings are icephobic: role of surface topology”, *Surface and Coatings Technology*, 2019, Vol. 358, pp. 207-214
- 219.Z. S. Huang, Y. Y. Quan, J. J. Mao, Y. L. Wang, Y. K. Lai, J. Zheng, Z. Chen, K. Wei, H. Q. Li “Multifunctional superhydrophobic composite materials with remarkable mechanochemical robustness, stain repellency, oil-water separation and sound-absorption properties”, *Chemical Engineering Journal*, 2019, Vol. 358, pp. 1610-1619
- 220.X. H. Wu, X. Zhao, J. W. C. Ho, Z. Chen “Design and Durability Study of Environmental-friendly Room-Temperature Processable Icephobic Coatings”, *Chemical Engineering Journal*, 2019, Vol. 355, pp. 901-909
- 221.Y. Cheng, T. X. Zhu, S. H. Li, J. Y. Huang, J. J. Mao, H. Yang, S. W. Gao, Z. Chen, Y. K. Lai “A novel strategy for fabricating robust superhydrophobic fabrics by environmentally-friendly enzyme etching”, *Chemical Engineering Journal*, 2019, Vol. 355, pp. 290-298

2018

- 222.X. Zhao, J. Y. Feng, N. Wang, X. Yao, W. Chen, S. Chen, Z. H. Huang, Z. Chen “The influence of Ti doping on morphology and photoelectrochemical properties of hematite grown from aqueous solution for water splitting”, *Energy Technology*, 2018, Vol. 6, pp. 2188-2199
- 223.H. L. Liu, S. X. Li, H. Y. Li, Z. Chen, J. Li, Y. J. Li “HNTs/SiO₂ dual-network aerogels with improved strength and thermal insulation”, *Journal of Sol-Gel Science and Technology*, 2018, Vol. 88, pp. 519-527
- 224.J. Hu, X. Zhao, W. Chen, Z. Chen “Enhanced Charge Transport and Increased Active Sites on α-Fe₂O₃ (110) Nanorod Surface Containing Oxygen Vacancies for Improved Solar Water Oxidation Performance”, *ACS Omega*, 2018, Vol. 3, pp. 14973-14980
- 225.H. L. Liu, G. Q. An, H. Y. Li, Z. Chen, J. Li, Y. J. Li “SiBCN-ZrO₂ hybrid ceramic aerogels through the polymer-derived ceramics (PDCs) route”, *Ceramics International*, 2018, Vol. 44, pp. 22991-22996
- 226.Q. B. Nguyen, D. N. Luu, S. M. L. Nai, Z. Zhu, Z. Chen, J. Wei “The role of powder layer thickness on the quality of SLM printed parts”, *Archives of Civil and Mechanical Engineering*, 2018, Vol. 18, pp. 948-955
- 227.B. Y. Luo, W. L. Goh, Z. Chen, J. M. Yuan “Laterally pre-compressed SiC tiles against long rod impact”, *Defence Technology*, 2018, Vol. 14, pp. 585-589
- 228.X. H. Wu, Y. X. Tang, V. V. Silberschmidt, P. Wilson, Z. Chen “Mechanically Robust Transparent Anti-icing Coatings: Roles of Dispersion status of Titanate Nanotubes”, *Advanced Materials Interfaces*, 2018, Vol. 5, Article 1800773
- 229.X. Zhao, J. Hu, B. Wu, A. Banerjee, S. Chakraborty, J. Y. Feng, Z.-Y. Zhao, S. Chen, R. Ahuja, T. C. Sum, Z. Chen “Simultaneous enhancement in charge separation and onset potential for water oxidation in BiVO₄ photoanode by W-Ti codoping”, *Journal of Materials Chemistry A*, 2018, Vol. 6, pp. 16965-16974
- 230.S. J. He, Z. Wang, J. Hu, J. B. Zhu, L. P. Wei, Z. Chen “Formation of superhydrophobic micro-nanostructured iron oxide for corrosion protection of N80 steel”, *Materials & Design*, 2018, Vol. 160, pp. 84-94
- 231.J. Hu, T. T. Wang, Z. Wang, L. P. Wei, J. B. Zhu, M. S. Zheng, Z. Chen “Corrosion Protection of N80 Steel in Hydrochloric Acid Medium Using Mixed C₁₅H₁₅NO and Na₂WO₄ Inhibitors”, *Coatings*, 2018, Vol. 8, Article 315
- 232.Z. H. Gan, C. Z. Wang, Z. Chen “Material Structure and Mechanical Properties of Silicon Nitride and Silicon Oxynitride Thin Films Deposited by Plasma Enhanced Chemical Vapor Deposition”, *Surfaces*, 2018, Vol. 1, pp. 59-72
- 233.W. Zhang, R. Li, X. Zhao, Z. Chen, A. W. K. Law, K. Zhou “A Cobalt-Based Metal-Organic Framework as Cocatalyst on BiVO₄ Photoanode for Enhanced Photoelectrochemical Water Oxidation”, *ChemSusChem*, 2018, Vol. 11, pp. 2710-2716
- 234.Y. C. Gong, Z. Chen, M. Yang, H. L. Wang, C. Dang, W. X. Huang, T. C. Lu “A preliminary study on the preparation of nanostructured Ti-doped Li₄SiO₄ pebbles by two-step sintering process”, *Ceramics International*, 2018, Vol. 44, pp. 16209-16213
- 235.X. H. Wu, Z. Chen “A Mechanically Robust Transparent Coating for Anti-icing and Self-cleaning Applications”, *Journal of Materials Chemistry A*, 2018, Vol. 6, pp. 16043-16052
- 236.S. W. Gao, X. L. Dong, J. Y. Huang, J. N. Dong, Y. Cheng, Z. Chen, Y. K. Lai “Co-solvent induced self-roughness superhydrophobic coatings with self-healing property for versatile oil-water separation”, *Applied Surface Science*, 2018, Vol. 459, pp. 512-519
- 237.Y. Z. Shen, J. Tao, Z. Chen, C. L. Zhu, G. Y. Wang, H. F. Chen, S. Y. Liu “Rational design of the nanostructure features on superhydrophobic surfaces for enhanced dynamic water repellency”, *ACS Sustainable Chemistry & Engineering*, 2018, Vol. 6, pp. 9958-9965

- 238.C. Wang, Z. Chen, V. V. Silberschmidt, A. Roy “Damage Accumulation in Braided Textiles Reinforced Composites under Repeated Impacts: Experimental and Numerical Studies”, *Composite Structures*, 2018, Vol. 204, pp. 256-267
- 239.X. Zhao, J. Hu, X. Yao, S. Chen, Z. Chen “Clarifying the roles of oxygen vacancy in W-doped BiVO₄ for solar water splitting”, *ACS Applied Energy Materials*, 2018, Vol. 1, pp. 3410-3419
- 240.J. N. Dong, X. N Zhang, J. Y. Huang, S. W. Gao, J. J. Mao, J. S. Cai, Z. Chen, S. Sathasivam, C. J. Carmalt, Y. K. Lai “Boosting heterojunction interaction in electrochemical construction of MoS₂ quantum dots@TiO₂ nanotube arrays for highly effective photoelectrochemical performance and electrocatalytic hydrogen evolution”, *Electrochemistry Communications*, 2018, Vol. 93, pp. 152-157
- 241.X. Dong, Z. Chen, A. R. Guo, J. C. Liu, X. Wang, C. Chen “Mechanical and interfacial behavior of single mullite fiber and mullite fiber-based porous ceramics”, *Ceramics International*, 2018, Vol. 44, pp. 14446-14456
- 242.Y. C. Zhong, R. Suraj, C. Wang, E. S. M. Chia, S. C. Joshi, Z. Chen “Damage advancement behavior in braided composite structure for mini aerial vehicle”, *Mechanics of Advanced Materials and Structures*, 2018, Vol. 25, pp. 889-900
- 243.X. Zhao, J. Hu, S. Chen, Z. Chen “An investigation on the role of W doping in BiVO₄ photoanodes used for solar water splitting”, *Physical Chemistry Chemical Physics*, 2018, Vol. 20, pp. 13637-13645
- 244.X. Shu, Y. Wang, J. W. Cui, G. Q. Xu, J. F. Zhang, W. F. Yang, M. F. Xiao, H. M. Zheng, Y. Q. Qin, Y. Zhang, Z. Chen, Y. C. Wu “Supercapacitive performance of single phase CuO nanosheet arrays with ultra-long cycling stability”, *Journal of Alloys and Compounds*, 2018, Vol. 753, pp. 731-739
- 245.J. Y. Feng, Z. Q. Wang, X. Zhao, G. Yang, B. W. Zhang, Z. Chen, Y. Z. Huang “Probing the Performance Limitations in Thin-Film FeVO₄ Photoanodes for Solar Water Splitting”, *The Journal of Physical Chemistry C*, 2018, Vol. 122, pp. 9773-9782
- 246.H. Liu, Y. D. Wang, J. Y. Huang, Z. Chen, G. Q. Chen, Y. K. Lai “Bioinspired surfaces with superamphiphobic properties: Concepts, synthesis and applications”, *Advanced Functional Materials*, 2018, Vol. 28, Article 1707415
- 247.Z. Zhu, Y. C. Chan, Z. Chen, C. L. Gan, F. S. Wu “Effect of the size of carbon nanotubes (CNTs) on the microstructure and mechanical strength of CNTs-doped composite Sn_{0.3}Ag_{0.7}Cu-CNTs solder”, *Materials Science and Engineering A*, 2018, Vol. 727, pp. 160-169
- 248.M. Z. Ge, C. Y. Cao, J. Y. Huang, X. N. Zhang, Y. X. Tang, X. R. Zhou, K. Q. Zhang, Z. Chen, Y. K. Lai “Rational design of materials interface at nanoscale towards intelligent oil-water separation”, *Nanoscale Horizons*, 2018, Vol. 3, pp. 235-260
- 249.J. Hu, S. L. Zheng, X. Zhao, X. Yao, Z. Chen “A theoretical study on the surface and interfacial properties of Ni₃P for hydrogen evolution reaction”, *Journal of Materials Chemistry A*, 2018, Vol. 6, pp. 7827-7834
- 250.Y. Cheng, H. Yang, Y. Yang, J. Y. Huang, K. Wu, Z. Chen, X. Q. Wang, C. J. Lin, Y. K. Lai “Progress in TiO₂ nanotube coatings for biomedical applications: A review”, *Journal of Materials Chemistry B*, 2018, Vol. 6, pp. 1862-1886
- 251.J. Hu, S. J. He, Y. Z. Zhang, H. X. Ma, X. L. Zhang, Z. Chen “Theoretical insights into the solvent polarity effect on quality of self-assembled n-octadecanethiol monolayers on Cu (111) surface”, *Molecules*, 2018, Vol. 23 (4), Article 733
- 252.J. Hu, W. Chen, X. Zhao, H. B. Su, Z. Chen “Anisotropic Electronic Characteristics, Adsorption, and Stability of Low-index BiVO₄ Surfaces for Photoelectrochemical Applications”, *ACS Applied Materials & Interfaces*, 2018, Vol. 10, pp. 5475-5484
- 253.X. Yao, D. P. Wang, X. Zhao, S. S. Ma, P. S. Bassi, G. Yang, W. Chen, Z. Chen, T. Sritharan “Scale-up of BiVO₄ photoanode for water splitting in a photoelectrochemical cell: issues and challenges”, *Energy Technology*, 2018, Vol. 6, pp. 100-109
- 254.C. L. He, J. Y. Huang, S. H. Li, K. Meng, L. Y. Zhang, Z. Chen, Y. K. Lai “Mechanically Resistant and Sustainable Cellulose-based Composite Aerogels with Excellent Flame Retardant, Sound-absorption and Super-antiwetting Ability for Advanced Engineering Materials”, *ACS Sustainable Chemistry & Engineering*, 2018, Vol. 6, pp. 927-936
- 255.L. Y. Jiang, Q. C. Ye, J. M. Chen, Z. Chen, Y. L. Gu “Preparation of magnetically recoverable bentonite-Fe₃O₄-MnO₂ composite particles for Cd(II) removal from aqueous solutions”, *Journal of Colloid and Interface Science*, 2018, Vol. 513, pp. 748-759
- 256.X. H. Wu, S. L. Zheng, D. A. Bellido-Aguilar, V. V. Silberschmidt, Z. Chen “Transparent icephobic coatings using bio-based epoxy resin”, *Materials & Design*, 2018, Vol. 140, pp. 516-523
- 257.S. W. Gao, X. L. Dong, J. Y. Huang, S. H. Li, Y. W. Li, Z. Chen, Y. K. Lai “Rational construction of highly transparent superhydrophobic coatings based on a non-particle, fluorine-free and water-rich system for versatile oil-water separation”, *Chemical Engineering Journal*, 2018, Vol. 333, pp. 621-629

2017

- 258.S. N. Zhang, J. Y. Huang, Y. Cheng, H. Yang, Z. Chen, Y. K. Lai “Bioinspired Surfaces with Superwettability for Anti-icing and Ice-phobic Application: Concept, Mechanism, and Design”, *Small*, 2017, Vol. 13, Article 1701867

259. X. Zhao, Z. Chen "Enhanced photoelectrochemical water splitting performance using morphology-controlled BiVO₄ with W doping", *Beilstein Journal of Nanotechnology*, 2017, Vol. 8, pp. 2640-2647
260. Y. Z. Shen, G. Y. Wang, J. Tao, C. L. Zhu, S. Y. Liu, M. M. Jin, Y. H. Xie, Z. Chen "Anti-Icing Performance of Superhydrophobic Texture Surfaces Depending on Reference Environments", *Advanced Materials Interfaces*, 2017, Vol. 4, Article 1700836
261. M. Dahanayaka, B. Liu, Z. Q. Hu, Q.-X. Pei, Z. Chen, A. W.-K. Law, K. Zhou "Graphene Membranes with Nanoslits for Seawater Desalination via Forward Osmosis", *Physical Chemistry Chemical Physics*, 2017, Vol. 19, pp. 30551-30561
262. Y. Y. Zhang, O. I. Malyi, Y. X. Tang, J. Q. Wei, Z. Q. Zhu, H. R. Xia, W. L. Li, J. Guo, X. R. Zhou, Z. Chen, C. Persson, X. D. Chen "Reducing Charge Carrier Transport Barrier in Functionally Layer-graded Electrode", *Angewandte Chemie International Edition*, 2017, Vol. 56, pp. 14847-14852
263. J. J. Ma, M. Yang, Q. Chen, S. S. Zhang, H. Cheng, S. Y. Wang, L. Liu, C. Y. Zhang, Z. W. Tong, Z. Chen "Comparative study of Keggin-type polyoxometalate pillared layered double hydroxides via two synthetic routes: Characterization and catalytic behavior in green epoxidation of cyclohexene", *Applied Clay Science*, 2017, Vol. 150, pp. 201-216
264. A. S. Ganapathi, S. C. Joshi, Z. Chen "Experimental and numerical investigation of process-induced deformations of glass/epoxy wind turbine blade spar cap", *Journal of Composite Materials*, 2017, Vol. 51, pp. 3791-3806
265. X. X. Hu, X. H. Ma, X. Dong, C. J. Cao, H. Y. Du, Z. Chen "The prediction of elastic modulus of the mullite fiber network based on the actual structure architecture", *Ceramics International*, 2017, Vol. 43, pp. 16107-16113
266. C. Wang, A. Roy, Z. Chen, V. V. Silberschmidt "Braided Textile Composites for Sports Protection: Energy Absorption and Delamination in Impact Modelling", *Materials & Design*, 2017, Vol. 136, pp. 258-269
267. L. Shen, A. Q. Foo, S. J. Wang, Z. Chen "Enhancing Creep Resistance of SnBi Solder Alloy with Non-reactive Nano Fillers: A Study Using Nanoindentation", *Journal Alloys and Compounds*, 2017, Vol. 729, pp. 498-506
268. B. Zheng, L. P. Wong, L. Y. L. Wu, Z. Chen "Identifying Key Factors towards Highly Reflective Silver Coatings", *Advances in Materials Science and Engineering*, 2017, Vol. 2017, Article 7686983
269. Y. X. Tang, J. Y. Deng, W. L. Li, O. I. Malyi, Y. Y. Zhang, X. R. Zhou, S. W. Pan, J. Q. Wei, Y. R. Cai, Z. Chen, X. D. Chen "Water-Soluble Sericin Protein Enabling Stable Solid-Electrolyte Interphase for Fast Charging High Voltage Battery Electrode", *Advanced Materials*, 2017, Vol. 29, Article 1701828
270. C. Wang, A. Roy, V. V. Silberschmidt, Z. Chen "Modelling of Damage Evolution in Braided Composites: Recent Developments", *Mechanics of Advanced Materials and Modern Processes*, 2017, Vol. 3, Article 15
271. J. Hu, X. Zhao, W. Chen, H. B. Su, Z. Chen "Theoretical Insight into the Mechanism of Photoelectrochemical Oxygen Evolution Reaction on BiVO₄ Anode with Oxygen Vacancy", *The Journal of Physical Chemistry C*, 2017, Vol. 121, pp. 18702-18709
272. T. H. Zhou, Y. H. Du, D. P. Wang, S. M. Yin, W. G. Tu, Z. Chen, A. Borgna, R. Xu "Phosphonate-based Metal-Organic Framework Derived Co-P-C Hybrid as an Efficient Electrocatalyst for Oxygen Evolution Reaction", *ACS Catalysis*, 2017, Vol. 7, pp. 6000-6007
273. H. Liu, J. Y. Huang, Z. Chen, G. Q. Chen, K. Q. Zhang, S. S. Al-Deyab, Y. K. Lai "Robust translucent superhydrophobic PDMS/PMMA film by facile one-step spray for self-cleaning and efficient emulsion separation", *Chemical Engineering Journal*, 2017, Vol. 330, pp. 26-35
274. X. J. Zhan, Z. Chen, Q. C. Zhang "Recent Progress on Two-Dimensional COFs for Energy-Related Applications", *Journal of Materials Chemistry A*, 2017, Vol. 5, pp. 14463-14479
275. K. L. Koh, X. B. Ji, A. Dasari, X. H. Lu, S. K. Lau, Z. Chen "Fracture toughness and elastic modulus of epoxy-based nanocomposites with dopamine-modified nano-fillers", *Materials*, 2017, Vol. 10, Article 776
276. S. Deng, J. Y. Huang, Z. Chen, Y. K. Lai "Controllable superhydrophobic coating on cotton fabric by UV induced thiol-ene reaction for wettability patterning and device metallization", *Advanced Materials Interfaces*, 2017, Vol. 4, Article 1700268
277. Y. Z. Shen, S. Y. Liu, C. L. Zhu, J. Tao, Z. Chen, H. J. Tao, L. Pan, G. Y. Wang, T. Wang "Bouncing dynamics of impact droplets on the convex superhydrophobic surfaces", *Applied Physics Letters*, 2017, Vol. 110, Article 221601
278. V. K. Murugan, Z. G. Jia, G. J. Syaranamual, Y. Z. Huang, Z. Chen "The disparity of corrosion resistance between Ni/Au and Ni-P/Au electrical contacts in mixed flowing gas and salt spray tests", *Journal of Materials Science*, 2017, Vol. 52, pp. 9834-9849
279. A. S. Zuruza, M. H. Nurmawati, J. W. C. Ho, Z. Chen "In-Place Synthesis of Pt-Modified Brookite TiO₂ Micrometre-Sized Sensing Elements via Wet Oxidation of Ti/Pt/Ti Films on Glass", *Sensor Letters*, 2017, Vol. 15, pp. 402-406
280. Z. A. Umar, R. S. Rawat, R. Ahmad, Z. Chen, Z. Zhang, J. Siddiqui, A. Hussain, T. Hussain, M. A. Baig "Structural, compositional and hardness properties of hydrogenated amorphous carbon nitride thin films synthesized by dense plasma focus device", *Surface and Interface Analysis*, 2017, Vol. 49, pp. 548-553
281. J. D. Lim, P. M. Lee, Z. Chen "Understanding the Bonding Mechanisms of Directly Sputtered Copper Thin Film on an Alumina Substrate", *Thin Solid Films*, 2017, Vol. 634, pp. 6-14

282. J. Li, Z. Chen "First-principles study on the electronic and photocatalytic properties of Ag_3XO_4 ", *Acta Physico-Chimica Sinica*, 2017, Vol. 33, pp. 941-948 (in Chinese with English abstract & figure captions)
283. W. C. J. Ho, Q. L. Tay, H. Qi, Z. H. Huang, J. Li, Z. Chen "Photocatalytic and Adsorption Performances of Faceted Cuprous Oxide (Cu_2O) Particles for the Removal of Methyl Orange (MO) from Aqueous Media", *Molecules*, 2017, Vol. 22 (4), Article 677
284. Y. C. Gong, D. P. Wang, R. B. Wu, S. Gazi, H. S. Soo, T. Sritharan, Z. Chen "New insights into the photocatalytic activity of 3-D core-shell P25@silica nanocomposites: impact of mesoporous coating", *Dalton Transactions*, 2017, Vol. 46, pp. 4994-5002
285. M. Dahanayaka, B. Liu, Z. Q. Hu, Z. Chen, A. W.-K. Law, K. Zhou "Corrugated Graphene Layers for Sea Water Desalination using Capacitive Deionization", *Physical Chemistry Chemical Physics*, 2017, Vol. 19, pp. 8552-8562
286. L. Shen, Y. Y. Wu, S. J. Wang, Z. Chen "Creep Behavior of Sn-Bi Solder Alloys at Elevated Temperatures Studied by Nanoindentation", *Journal of Materials Science: Materials in Electronics*, 2017, Vol. 28, pp. 4114-4124
287. H. Liu, J. Y. Huang, F. Y. Li, Z. Chen, K.-Q. Zhang, S. S. Al-Deyab, Y. K. Lai "Multifunctional Superamphiphobic Fabrics with Asymmetric Wettability for One-Way Fluid Transport and Templated Patterning", *Cellulose*, 2017, Vol. 24, pp. 1129-1141
288. C. M. Li, Y. H. Du, D. P. Wang, S. M. Yin, W. G. Tu, Z. Chen, M. Kraft, G. Chen, R. Xu "Unique P-Co-N surface bonding states constructed on g- C_3N_4 nanosheets for drastically enhanced photocatalytic activity of H_2 evolution", *Advanced Functional Materials*, 2017, Vol. 27, Article 1604328
289. S. N. Zhang, J. Y. Huang, Y. X. Tang, S. H. Li, M. Z. Ge, Z. Chen, K. Q. Zhang, Y. K. Lai "Understanding the Role of Dynamic Wettability for Condensate Microdrop Self-propelling based on Designed Superhydrophobic TiO_2 Nanostructures", *Small*, 2017, Vol. 13, Article 1600687
290. M. Z. Ge, Q. S. Li, C. Y. Cao, J. Y. Huang, S. H. Li, S. N. Zhang, Z. Chen, K. Q. Zhang, S. S. Al-Deyab, Y. K. Lai "One-dimensional TiO_2 Nanotube Photocatalysts for Solar Water Splitting", *Advanced Science*, 2017, Vol. 4, Article 1600152
291. S. N. Zhang, J. Y. Huang, Z. Chen, Y. K. Lai "Bioinspired Special Wettability Surfaces: From Fundamental Research to Water Harvesting Application", *Small*, 2017, Vol. 13, Article 1602992
292. X. Zhao, J. Y. Feng, S. Chen, Y. Z. Huang, T. C. Sum, Z. Chen "New insight into the roles of oxygen vacancies in hematite for solar water splitting", *Physical Chemistry Chemical Physics*, 2017, Vol. 19, pp. 1074-1082
293. J. J. Ma, L. Liu, Q. Chen, M. Yang, D. P. Wang, Z. W. Tong, Z. Chen "A facile approach to prepare crumpled CoTMPyP/electrochemically reduced graphene oxide nanohybrid as an efficient electrocatalyst for hydrogen evolution reaction", *Applied Surface Science*, 2017, Vol. 399, pp. 535-541
294. C. Zhao, Y. C. Huang, Z. Chen, S. K. Ha "Progressive failure prediction of a landing gear structure of braided composites", *Composite Structures*, 2017, Vol. 161, pp. 407-418
295. S. H. Li, J. Y. Huang, Z. Chen, G. Q. Chen, Y. K. Lai "A review on special wettability textiles: theoretical models, fabrication technologies and multifunctional applications", *Journal of Materials Chemistry A*, 2017, Vol. 5, pp. 31-55

2016

296. J. Y. Feng, X. Zhao, S. S. K. Ma, D. P. Wang, Z. Chen, Y. Z. Huang "Fast and Simple Construction of Efficient Solar-Water-Splitting Electrodes with Micrometer-Sized Light-Absorbing Precursor Particles", *Advanced Materials Technologies*, 2016, Vol. 1, Article 1600119
297. Q. Wang, J. Y. Huang, H. Q. Li, A. Z. Chen, A. Z. J. Zhao, Y. Wang, K. Q. Zhang, H. T. Sun, S. S. Al-Deyab, Y.-K. Lai " TiO_2 nanotube platforms for smart drug delivery: A review", *International Journal of Nanomedicine*, 2016, Vol. 11, pp. 4819-4834
298. A. S. Ganapathi, M. Maheshwari, S. C. Joshi, Z. Chen, A. K. Asundi, S. C. Tjin "In-situ measurement and numerical simulation of resin pressure during Glass/Epoxy prepreg composite manufacturing", *Measurement*, 2016, Vol. 94, pp. 505-514
299. A. S. Ganapathi, S. C. Joshi, Z. Chen "Flow-compacted deformations coupled with thermo-chemically induced distortions in manufacturing of thick unidirectional carbon fiber reinforced plastics composites", *Journal of Composite Materials*, 2016, Vol. 50, pp. 3325-3343
300. D. Kumar, L. Li, Z. Chen "Mechanically robust polyvinylidene fluoride (PVDF) based superhydrophobic coatings for self-cleaning applications", *Progress in Organic Coatings*, 2016, Vol. 101, pp. 385-390
301. R. B. Wu, D. P. Wang, K. Zhou, N. Srikanth, J. Wei, Z. Chen "Porous Cobalt Phosphide/Graphitic Carbon Polyhedra Hybrid Composites for Efficient Oxygen Evolution Reactions", *Journal of Materials Chemistry A*, 2016, Vol. 4, pp. 13742-13745
302. P. M. Lee, W. H. Ng, J. D. Lim, N. W. Khun, Z. Chen, E. J. Liu "Nanostructure restoration of thermally reduced graphene oxide electrode upon incorporation of Nafion for detection of trace heavy metals in aqueous solution", *Electroanalysis*, 2016, Vol. 28, pp. 2037-2043

- 303.S. L. Zheng, L. Cheng, Q. T. Fu, T. F. Xiang, W. Hu, J. Wang, S. B. Ding, P. J. Liu, Z. Chen "Fabrication of Micro-Nanostructured Superhydrophobic Aluminum Surface with Excellent Corrosion Resistance and Anti-Icing Performance", *RSC Advances*, 2016, Vol. 6, pp. 79389-79400
- 304.B. Y. Ma, Y. Yin, Y. Li, G. L. Liu, W. L. Huang, Z. Chen, G. Q. Li, J. K. Yu "Facile synthesis of MgAl₂O₄ with high crystallinity from KCl-MgCl₂ composite molten salts", *Materials Research Innovations*, 2016, Vol. 20, pp. 415-420
- 305.A. B. Y. Lim, C. B. Boothroyd, O. Yauw, B. Chylak, C. L. Gan, Z. Chen "Interfacial evolution and bond reliability in thermosonic Pd coated Cu wire bonding on aluminum metallization: Effect of palladium distribution", *Microelectronics Reliability*, 2016, Vol. 63, pp. 214-223
- 306.C. Y. Cao, M. Z. Ge, J. Y. Huang, S. H. Li, S. Deng, S. N. Zhang, Z. Chen, K. Q. Zhang, S. S. Al-Deyabd, Y. K. Lai "Robust fluorine-free superhydrophobic PDMS-ormosil@fabrics for highly effective self-cleaning and efficient oil-water separation", *Journal of Materials Chemistry A*, 2016, Vol. 4, pp. 12179-12187
- 307.H. Qi, J. Wolfe, D. Fichou, Z. Chen "Cu₂O Photocathode for Low Bias Photoelectrochemical Water Splitting Enabled by NiFe-Layered Double Hydroxide Co-Catalyst", *Scientific Reports*, 2016, Vol. 6, Article 30882
- 308.Q. L. Tay, X. H. Wang, X. Zhao, J. D. Hong, Q. Zhang, R. Xu, Z. Chen "Enhanced visible light hydrogen production via a multiple heterojunction structure with defect-engineered g-C₃N₄ and two-phase anatase/brookite TiO₂", *Journal of Catalysis*, 2016, Vol. 342, pp. 55-62
- 309.Z.-T. Hu, Z. Chen, R. Goei, W. Y. Wu, T. T. Lim "Magnetically recyclable Bi/Fe-based hierarchical nanostructures via self-assembly for environmental decontamination", *Nanoscale*, 2016, Vol. 8, pp. 12736-12746
- 310.J. N. Balaraju, P. Radhakrishnan, V. Ezhilselvi, A. A. Kumar, Z. Chen, K. P. Surendran "Studies on electroless nickel polyalloy coatings over carbon fibers/CFRP composites", *Surface and Coatings Technology*, 2016, Vol. 302, pp. 389-397
- 311.Q. L. Tay, Z. Chen "Effective charge separation towards enhanced photocatalytic activity via compositing reduced graphene oxide with two-phase anatase/brookite TiO₂", *International Journal of Hydrogen Energy*, 2016, Vol. 41, pp. 10590-10597
- 312.B. Zheng, L. P. Wong, L. Y. L. Wu, Z. Chen "Cyclic Voltammetric Study of High Speed Silver Electrodeposition and Dissolution in Low Cyanide Solutions", *International Journal of Electrochemistry*, 2016, Vol. 2016, Article 4318178
- 313.J. Y. Han, D. P. Wang, Y. H. Du, S. B. Xi, Z. Chen, S. M. Yin, T. H. Zhou, R. Xu "Polyoxometalate immobilized in MIL-101(Cr) as an efficient catalyst for water oxidation", *Applied Catalysis A: General*, 2016, Vol. 521, pp. 83-89
- 314.Y. Li, K. M. Luo, A. B. Y. Lim, Z. Chen, F. S. Wu, Y. C. Chan "Improving the mechanical performance of Sn57.6Bi0.4Ag solder joints on Au/Ni/Cu pads during aging and electromigration through the addition of tungsten (W) nanoparticle reinforcement", *Materials Science and Engineering A*, 2016, 2016, Vol. 669, pp. 291-303
- 315.V. K. Murugan, Z. G. Jia, G. J. Syaranamual, C. L. Gan, Y. Z. Huang, Z. Chen "An investigation into different nickel and nickel-phosphorus stacked thin coatings for corrosion protection of electrical contacts", *Surface and Coatings Technology*, 2016, Vol. 300, pp. 95-103
- 316.D. P. Wang, P. S. Bassi, H. Qi, X. Zhao, Gurudayal, L. H. Wong, R. Xu, T. Sritharan, Z. Chen "Improved charge separation in WO₃/CuWO₄ composite photoanodes for photoelectrochemical water oxidation", *Materials*, 2016, Vol. 9 (5), Article 348
- 317.M. Z. Ge, C. Y. Cao, J. Y. Huang, S. H. Li, Z. Chen, K.-Q. Zhang, S. S. Al-Deyab, Y. K. Lai "A Review of One-dimensional TiO₂ Nanostructured Materials for Environmental and Energy Applications", *Journal of Materials Chemistry A*, 2016, Vol. 4, pp. 6772-6801
- 318.Y. K. Lai, J. Y. Huang, Z. Q. Cui, M. Z. Ge, K.-Q. Zhang, Z. Chen, L. F. Chi "Recent advances in TiO₂-based nanostructure surfaces with controllable wettability and adhesion", *Small*, 2016, Vol. 12, pp. 2203-2224
- 319.V. K. Murugan, Z. G. Jia, G. J. Syaranamual, C. L. Gan, Y. Z. Huang, Z. Chen "Atmospheric corrosion resistance of electroplated Ni/Ni-P/Au electronic contacts", *Microelectronics Reliability*, 2016, Vol. 60, pp. 84-92
- 320.C. Wang, Y. C. Zhong, P. F. B. Adaikalaraj, X. B. Ji, A. Roy, V. V. Silberschmidt, Z. Chen "Strength Prediction for Bi-axial Braided Composites by A Multi-scale Modelling Approach", *Journal of Materials Science*, 2016, Vol. 51, pp. 6002-6018
- 321.A. S. Ganapathi, S. C. Joshi, Z. Chen "Influence of cure kinetic, rheological and thermo-mechanical behavior on micro-level curing strain of an epoxy prepreg", *Journal of Thermal Analysis and Calorimetry*, 2016, Vol. 124, pp. 305-316
- 322.Y. Li, A. B. Y. Lim, K. M. Luo, Z. Chen, F. S. Wu, Y. C. Chan "Phase segregation, interfacial intermetallic growth and electromigration-induced failure in Cu/In-48Sn/Cu solder interconnects under current stressing", *Journal of Alloys and Compounds*, 2016, Vol. 673, pp. 372-382
- 323.X. H. Rui, Y. X. Tang, O. I. Malyi, A. Gusak, Y. Y. Zhang, Z. Q. Niu, H. T. Tan, C. Persson, X. D. Chen, Z. Chen, Q. Y. Yan "Ambient Dissolution-Recrystallization towards Large-Scale Preparation of V₂O₅ Nanobelts for High-Energy Battery Applications", *Nano Energy*, 2016, Vol. 22, pp. 583-593

324. N. S. Nobeen, Y. C. Zhong, B. A. P. Francis, X. B. Ji, E. S. M. Chia, S. C. Joshi, Z. Chen "Constituent materials micro-damage modeling in predicting progressive failure of braided fibre composites", *Composite Structures*, 2016, Vol. 145, pp. 194-202
325. G. Yoganandan, J. N. Balaraju, C. H. C. Low, G. J. Qi, Z. Chen "Electrochemical and long term corrosion behavior of Mn and Mo oxyanions sealed anodic oxide surface developed on aerospace aluminum alloy (AA2024)", *Surface and Coatings Technology*, 2016, Vol. 288, pp. 115-125
326. H. Liu, S.-W. Gao, J.-S. Cai, C.-L. He, J.-J. Mao, T.-X. Zhu, Z. Chen, J.-Y. Huang, K. Meng, K.-Q. Zhang, S. S. Al-Deyab, Y.-K. Lai "Recent Progress in Fabrication and Applications of Superhydrophobic Coating on Cellulose-Based Substrates", *Materials*, 2016, Vol. 9 (3), Article 124
327. S. L. Zheng, C. Li, Q. T. Fu, W. Hu, T. F. Xiang, Q. Wang, M. P. Du, X. C. Liu, Z. Chen "Development of Stable Superhydrophobic Coatings on Aluminum Surface for Corrosion-resistant, Self-cleaning, and Anti-icing Applications", *Materials & Design*, 2016, Vol. 93, pp. 261-270
328. A. B. Y. Lim, W. J. Neo, O. Yauw, B. Chylak, C. L. Gan, Z. Chen "Evaluation of the Corrosion Performance of Cu-Al Intermetallic Compounds and the Effect of Pd Addition", *Microelectronics Reliability*, 2016, Vol. 56, pp. 155-161
329. X. H. Wu, Q. T. Fu, D. Kumar, J. W. C. Ho, P. Kanhere, H. F. Zhou, Z. Chen "Mechanically robust superhydrophobic and superoleophobic coatings derived by sol-gel method", *Materials & Design*, 2016, Vol. 86, pp. 1302-1309

2015

330. P. Kanhere, S. Chakraborty, C. J. Rupp, R. Ahuja, Z. Chen "Substitution induced band structure shape tuning in hybrid perovskites ($\text{CH}_3\text{NH}_3\text{Pb}_{1-x}\text{Sn}_x\text{I}_3$) for efficient solar cell applications", *RSC Advances*, 2015, Vol. 5, pp. 107497-107502
331. J. Y. Han, D. P. Wang, Y. H. Du, S. B. Xi, J. D. Hong, S. M. Yin, Z. Chen, T. H. Zhou, R. Xu "Metal-Organic Framework Immobilized Cobalt Oxide Nanoparticles for Efficient Photocatalytic Water Oxidation", *Journal of Materials Chemistry A*, 2015, Vol. 3, pp. 20607-20613
332. Y. Jiang, Y. Wang, Y. Zhang, X. Shu, Z. Chen, Y. C. Wu "Controllable synthesis and capacitive performance of nitrogen-doped porous carbon from carboxymethyl chitosan by template carbonization method", *Journal of Solid State Electrochemistry*, 2015, Vol. 19, pp. 3087-3096
333. A. Hussain, R. S. Rawat, R. Ahmad, Z. A. Umar, T. Hussain, P. Lee, Z. Chen "Synthesis of nano-structure tungsten nitride thin films on silicon using Mather-type plasma focus", *Radiation Effects and Defects in Solids*, 2015, Vol. 170, pp. 557-566
334. Y. Y. Zhang, Z. L. Jiang, J. Y. Huang, L. Y. Lim, W. L. Li, J. Y. Deng, D. G. Gong, Y. X. Tang, Y. K. Lai, Z. Chen "Titanate and Titania Nanostructured Materials for Environmental and Energy Applications: A Review", *RSC Advances*, 2015, Vol. 5, pp. 79479-79510
335. Q. T. Fu, E. J. Liu, P. Wilson, Z. Chen "Ice nucleation behaviour on sol-gel coatings with different surface energy and roughness", *Physical Chemistry Chemical Physics*, 2015, Vol. 17, pp. 21492-21500
336. D. Kumar, X. H. Wu, Q. T. Fu, J. W. C. Ho, P. D. Kanhere, L. Li, Z. Chen "Hydrophobic sol-gel coatings based on polydimethylsiloxane for self-cleaning applications", *Materials & Design*, 2015, Vol. 86, pp. 855-862
337. C. Wang, X. B. Ji, A. Roy, V. V. Silberschmidt, Z. Chen "Shear Strength and Fracture Toughness of Carbon Fibre/epoxy Interface: Effect of Surface Treatment", *Materials & Design*, 2015, Vol. 85, pp. 800-807
338. J. D. Lim, P. M. Lee, D. M. W. Rhee, K. C. Leong, Z. Chen "Effect of Surface Treatment on Adhesion Strength between Magnetron Sputtered Copper Thin Films and Alumina Substrate", *Applied Surface Science*, 2015, Vol. 355, pp. 509-515
339. Q. L. Tay, P. Kanhere, C. F. Ng, S. Chen, S. Chakraborty, A. C. H. Huan, T. C. Sum, R. Ahuja, Z. Chen "Defect Engineered $\text{g-C}_3\text{N}_4$ for Efficient Visible Light Photocatalytic Hydrogen Production", *Chemistry of Materials*, 2015, Vol. 27, pp. 4930-4933
340. S. L. Zheng, C. Li, Q. T. Fu, M. Li, W. Hu, Q. Wang, M. P. Du, X. C. Liu, Z. Chen "Fabrication of Self-cleaning Superhydrophobic Surface on Aluminum Alloys with Excellent Corrosion Resistance", *Surface and Coatings Technology*, 2015, Vol. 276, pp. 341-348
341. H. Z. Gao, H. G. Wang, Y. L. Jin, J. Lv, G. Q. Xu, D. M. Wang, X. Y. Zhang, Z. Chen, Z. X. Zheng, Y. C. Wu "Controllable fabrication of immobilized ternary CdS/Pt-TiO₂ heteronanostructures toward high-performance visible-light driven photocatalysis", *Physical Chemistry Chemical Physics*, 2015, Vol. 17, pp. 17755-17761
342. J. Lv, H. Z. Gao, H. G. Wang, X. J. Lu, G. Q. Xu, D. M. Wang, Z. Chen, X. Y. Zhang, Z. X. Zheng, Y. C. Wu "Controlled deposition and enhanced visible light photocatalytic performance of Pt-modified TiO₂ nanotube arrays", *Applied Surface Science*, 2015, Vol. 351, pp. 225-231
343. P. M. Lee, Z. Chen, L. Li, E. J. Liu "Reduced graphene oxide decorated with tin nanoparticles through electrodeposition for simultaneous determination of trace heavy metals", *Electrochimica Acta*, 2015, Vol. 174, pp. 207-214
344. X. B. Ji, C. Wang, B. A. P. Francis, E. S. M. Chia, L. X. Zheng, J. L. Yang, S. C. Joshi, Z. Chen "Mechanical and Interfacial Properties Characterisation of Single Carbon Fibres for Composite Applications", *Experimental Mechanics*, 2015, Vol. 55, pp. 1057-1065

- 345.R. B. Wu, D. P. Wang, X. H. Rui, B. Liu, K. Zhou, A. W. K. Law, Q. Y. Yan, J. Wei, Z. Chen "In-Situ Formation of Hollow Hybrids Composed of Cobalt Sulfides Embedded within Porous Carbon Polyhedra/Carbon Nanotubes for High-Performance Lithium-Ion Batteries", *Advanced Materials*, 2015, Vol. 27, pp. 3038-3044
- 346.P. M. Lee, Z. M. Wang, X. X. Liu, Z. Chen, E. J. Liu "Glassy carbon electrode modified by graphene-gold nanocomposite coating for detection of trace lead ions in acetate buffer solution", *Thin Solid Films*, 2015, Vol. 584, pp. 85-89
- 347.D. Kumar, X. H. Wu, Q. T. Fu, J. W. C. Ho, P. D. Kanhere, L. Li, Z. Chen "Development of Durable Self-cleaning Coatings Using Organic-inorganic Hybrid Sol-gel Method", *Applied Surface Science*, 2015, Vol. 344, pp. 205-212
- 348.A. Hussnain, R. S. Rawat, R. Ahmad, T. Hussain, Z. A. Umar, U. Ikhlaq, Z. Chen, L. Shen "Study of structural and mechanical properties of nano-crystalline tungsten nitride film synthesis by plasma focus", *Radiation Effects and Defects in Solids*, 2015, Vol. 170, pp. 73-83
- 349.Y. K. Lai, H. F. Zhou, Z. Zhang, Y. X. Tang, J. W. C. Ho, J. Y. Huang, Q. L. Tay, K. Q. Zhang, Z. Chen, B. P. Binks "Multi-functional TiO₂-based Particles: The Effect of Fluorination Degree and Liquid Surface Tensions on Wetting Behavior", *Particle & Particle Systems Characterization*, 2015, Vol. 32, pp. 355-363
- 350.M. Y. Wei, J. W. C. Ho, Z. Chen "Effect of titania nano-fillers on the fracture toughness and mechanical performance of hybrid sol-gel coatings", *Nanoscience and Nanotechnology Letters*, 2015, Vol. 7, pp. 226-232
- 351.J. Lv, H. G. Wang, H. Z. Gao, G. Q. Xu, D. M. Wang, Z. Chen, X. Y. Zhang, Z. X. Zheng, Y. C. Wu "A research on the visible light photocatalytic activity and kinetics of CdS/CdSe co-modified TiO₂ nanotube arrays", *Surface and Coatings Technology*, 2015, Vol. 261, pp. 356-363
- 352.R. B. Wu, D. P. Wang, V. Kumar, K. Zhou, A. W. K. Law, P. S. Lee, J. Lou, Z. Chen "MOFs-Derived Copper Sulfides Embedded within Porous Carbon Octahedra for Electrochemical Capacitor Applications", *Chemical Communications*, 2015, Vol. 51, pp. 3109-3112
- 353.A. Hussnain, R. S. Rawat, K. S. Tan, R. Ahmad, T. Hussain, P. Lee, Z. Chen, L. Shen, Z. Zhang "Study of Structural and Mechanical Properties of WN/a-Si₃N₄ Hard Coatings Grown by Plasma Focus", *Journal of Fusion Energy*, 2015, Vol. 34, pp. 435-442
- 354.A. B. Y. Lim, X. Long, L. Shen, X. Chen, R. V. Ramanujan, C. L. Gan, Z. Chen "Effect of Palladium on the Mechanical Properties of Cu-Al Intermetallic Compounds", *Journal of Alloys and Compounds*, 2015, Vol. 628, pp. 107-112
- 355.H. Q. Li, Y. K. Lai, J. Y. Huang, Y. X. Tang, Z. Chen, K. Q. Zhang, G. K. L. Ng, L. P. Tan "Multifunctional wettability patterns prepared by laser processing on superhydrophobic TiO₂ nanostructured surfaces", *Journal of Materials Chemistry B*, 2015, Vol. 3, pp. 342-347
- 356.R. B. Wu, D. P. Wang, J. Y. Han, H. Liu, K. Zhou, Y. Z. Huang, R. Xu, J. Wei, X. D. Chen, Z. Chen "A general approach towards multi-faceted hollow oxide composites using zeolitic imidazolate frameworks", *Nanoscale*, 2015, Vol. 7, pp. 965-974

2014

- 357.Q. T. Fu, X. H. Wu, D. Kumar, J. W. C. Ho, P. D. Kanhere, N. Srikanth, E. J. Liu, P. Wilson, Z. Chen "Development of sol-gel icephobic coatings: effect of surface roughness and surface energy", *ACS Applied Materials & Interfaces*, 2014, Vol. 6, pp. 20685-20692
- 358.P. Kanhere, Z. Chen "A Review on Visible Light Active Perovskite-Based Photocatalysts", *Molecules*, 2014, Vol. 19, pp. 19995-20022
- 359.A. Sharif, G. L. Gan, Z. Chen "Customized Glass Sealant for Ceramic Substrates for High Temperature Electronic Application", *Microelectronics Reliability*, 2014, Vol. 54, pp. 2905-2910
- 360.Y. X. Tang, Y. Y. Zhang, J. Y. Deng, D. P. Qi, W. R. Leow, J. Q. Wei, S. Y. Yin, Z. L. Dong, R. Yazami, Z. Chen, X. D. Chen "Unravelling the Correlation between the Aspect Ratio of Nanotubular Structures and Their Electrochemical Performance To Achieve High-Rate and Long-Life Lithium-Ion Batteries", *Angewandte Chemie International Edition*, 2014, Vol. 53, pp. 13488-13492
- 361.Z. A. Umar, R. Ahmad, R. S. Rawat, A. Hussnain, N. Khalid, Z. Chen, L. Shen, Z. Zhang, T. Hussain "Influence of Different CH₄/N₂ Ratios on Structural and Mechanical Properties of a-CN_x:H Film Synthesized Using Plasma Focus", *Journal of Fusion Energy*, 2014, Vol. 33, pp. 640-647
- 362.A. B. Y. Lim, A. C. K. Chang, C. X. Lee, O. Yauw, B. Chylak, C. L. Gan, Z. Chen "Ultra-fine pitch palladium-coated copper wire bonding: effect of bonding parameters", *Microelectronics Reliability*, 2014, Vol. 54, pp. 2555-2563
- 363.Q. Xu, M. Sobhan, F. Anariba, J. W. C. Ho, Z. Chen, P. Wu "Transition metal-doped BiFeO₃ nanofibers: forecasting the conductivity limit", *Physical Chemistry Chemical Physics*, 2014, Vol. 16, pp. 23089-23095
- 364.H. Qi, J. Wolfe, D. P. Wang, H. J. Fan, D. Fichou, Z. Chen "Triple-layer nanostructured WO₃ photoanodes with enhanced photocurrent generation and superior stability for photoelectrochemical solar energy conversion", *Nanoscale*, 2014, Vol. 6, pp. 13457-13462

365. Y. Yang, J. N. Balaraju, Y. Z. Huang, Y. Y. Tay, Y. Q. Shen, Z. Tsakadze, Z. Chen "Interface Reaction between An Electroless Ni-Sn-P Metallization and Lead-free Sn-3.5Ag Solder with Suppressed Ni₃P Formation", *Journal of Electronic Materials*, 2014, Vol. 43, pp. 4103-4110
366. J. F. Zhang, Y. Wang, C. P. Yu, X. Shu, L. Jiang, J. W. Cui, Z. Chen, T. Xie, Y. C. Wu "Enhanced visible-light photoelectrochemical behaviour of heterojunction composite with Cu₂O nanoparticles-decorated TiO₂ nanotube arrays", *New Journal of Chemistry*, 2014, Vol. 38, pp. 4975-4984
367. Y. X. Tang, Y. Y. Zhang, J. Y. Deng, J. Q. Wei, H. L. Tam, B. K. Chandran, Z. L. Dong, Z. Chen, X. D. Chen "Mechanical Force-driven Growth of Elongated Bending TiO₂-based Nanotubular Materials for Ultrafast Rechargeable Lithium-ion Batteries", *Advanced Materials*, 2014, Vol. 26, pp. 6111-6118
368. J. F. Zhang, Y. Wang, T. K. Shen, X. Shu, J. W. Cui, Z. Chen, Y. C. Wu "Visible Light Photocatalytic Performance of Cu₂O/TiO₂ Nanotube Heterojunction Composites Prepared by Pulse Deposition", *Acta Physico-Chimica Sinica*, 2014, Vol. 30, pp. 1535-1542 (in Chinese with English abstract & figure captions)
369. P. Kanhere, P. Shenai, S. Chakraborty, R. Ahuja, J. W. Zheng, Z. Chen "Mono- and co-doped NaTaO₃ for visible light photocatalysis", *Physical Chemistry Chemical Physics*, 2014, Vol. 16, pp. 16085-16094
370. S. Xu, X. Hu, Y. Yang, Z. Chen, Y. C. Chan "Effect of carbon nanotubes and their dispersion on electroless Ni-P under bump metallization for lead-free solder interconnection", *Journal of Materials Science: Materials in Electronics*, 2014, Vol. 25, pp. 2682-2691
371. Y. H. Cheng, D. G. Gong, Y. X. Tang, J. W. C. Ho, Y. Y. Tay, W. S. Lau, O. Wijaya, J. X. Lim, Z. Chen "One-pot Solvothermal Synthesis of Dual-phase Titanate/titania Nanoparticles and Their Adsorption and Photocatalytic Performances", *Journal of Solid State Chemistry*, 2014, Vol. 214, pp. 67-73
372. Y. Yang, J. N. Balaraju, Y. Z. Huang, H. Liu, Z. Chen "Interface Reaction between An Electroless Ni-Co-P Metallization and Sn-3.5Ag Lead-free Solder with Improved Joint Reliability", *Acta Materialia*, 2014, Vol. 71, pp. 69-79
373. X. B. Ji, A. M. Khatri, E. S. M. Chia, R. K. H. Cha, B. T. B. Yeo, S. C. Joshi, Z. Chen "Multi-scale Simulation and FE-Assisted Computation of Elastic Properties of Braided Textile Reinforced Composites", *Journal of Composite Materials*, 2014, Vol. 48, pp. 931-949
374. X. Hu, S. Xu, Y. Yang, Z. Chen, Y. C. Chan "Effect of TiO₂ nanoparticle addition on electroless Ni-P under bump metallization for lead-free solder interconnection", *Materials Science and Engineering A*, 2014, Vol. 600, pp. 67-75
375. Q. Q. Li, Y. C. Chan, Z. Chen "Tin Whiskers Growth of SnAgIn solder on Kovar substrate with Au/Ni plating", *Journal of Materials Science: Materials in Electronics*, 2014, Vol. 25, pp. 1222-1227
376. V. V. Kulish, O. I. Malyi, M.-F. Ng, Z. Chen, S. Manzhos, P. Wu "Controlling Na Diffusion by Rational Design of Si-Based Layered Architectures", *Physical Chemistry Chemical Physics*, 2014, Vol. 16, pp. 4260-4267
377. D. G. Gong, J. G. Highfield, S. Z. E. Ng, Y. X. Tang, W. C. J. Ho, Q. L. Tay, Z. Chen "Poly tri-s-triazines as visible light sensitizers in titania-based composite photocatalysts: promotion of melon development from urea over acid titanates", *ACS Sustainable Chemistry & Engineering*, 2014, Vol. 2, pp. 149-157
378. Z. A. Umar, R. S. Rawat, R. Ahmad, A. K. Kumar, Y. Wang, T. Hussain, Z. Chen, L. Shen, Z. Zhang "Mechanical properties of Al/a-C nanocomposite thin films synthesized using plasma focus device", *Chinese Physics B*, 2014, Vol. 23, Article 025204
379. J. K. Gao, Q. L. Tay, P. Z. Li, W. W. Xiong, Y. L. Zhao, Z. Chen, Q. C. Zhang "Surfactant-thermal method to prepare a novel two-dimensional oxochalcogenide", *Chemistry – An Asian Journal*, 2014, Vol. 9, pp. 131-134
380. H. A. Sharif, C. L. Gan, Z. Chen "Transient Liquid Phase Ag-based Solder Technology for High-temperature Packaging Applications", *Journal of Alloys and Compounds*, 2014, Vol. 587, pp. 365-368

2013

381. L. J. Liu, J. Lv, G. Q. Xu, Y. Wang, K. Xie, Z. Chen, Y. C. Wu "Uniformly dispersed CdS nanoparticles sensitized TiO₂ nanotube arrays with enhanced visible-light photocatalytic activity and stability", *Journal of Solid State Chemistry*, 2013, Vol. 208, pp. 27-34
382. H. D. Bian, X. Shu, J. F. Zhang, B. Yuan, Y. Wang, L. J. Liu, G. Q. Xu, Z. Chen, Y. C. Wu "Uniformly Dispersed and Controllable Ligand-Free Silver-Nanoparticle-Decorated TiO₂ Nanotube Arrays with Enhanced Photoelectrochemical Behaviors", *Chemistry – An Asian Journal*, 2013, Vol. 8, pp. 2746-2754
383. D. P. Wang, P. Kanhere, M. J. Li, Q. L. Tay, Y. X. Tang, Y. Z. Huang, T. C. Sum, N. Mathews, T. Sritharan, Z. Chen "Improving Photocatalytic H₂ Evolution of TiO₂ via Formation of {001} - {010} Quasi-Heterojunctions", *The Journal of Physical Chemistry C*, 2013, Vol. 117, pp. 22894-22902
384. B. C. Wang, P. Kanhere, Z. Chen, J. Nisar, B. Pathak, R. Ahuja "Anion Doped NaTaO₃ for Visible Light Photocatalysis", *The Journal of Physical Chemistry C*, 2013, Vol. 117, pp. 22518-22524
385. Y. K. Lai, Y. X. Tang, J. Y. Huang, F. Pan, Z. Chen, K. Q. Zhang, H. Fuchs, L. F. Chi "Bioinspired TiO₂ Nanostructure Films with Special Wettability and Adhesion for Droplets Manipulation and Patterning", *Scientific Reports*, 2013, Vol. 3, Article 3009

386. Z. L. Jiang, Y. X. Tang, Q. L. Tay, Y. Y. Zhang, O. I. Malyi, D. P. Wang, J. Y. Deng, Y. K. Lai, H. F. Zhou, X. D. Chen, Z. L. Dong, Z. Chen "Understanding the Role of Nanostructures for Efficient Hydrogen Generation on Immobilized Photocatalysts", *Advanced Energy Materials*, 2013, Vol. 3, pp. 1368-1380
387. A. S. Zuruzi, M. H. Nurawati, Y. H. Yeo, S. X. Wu, C. H. Lai, Z. Chen "A Simple Strategy to Incorporate Pt into TiO₂ Nanosponges via Wet Oxidation of Multilayered Films", *RSC Advances*, 2013, Vol. 3, pp. 19971-19977
388. P. Kanhere, Y. X. Tang, J. W. Zheng, Z. Chen "Synthesis, photophysical properties and photocatalytic applications of Bi doped NaTaO₃ and Bi doped Na₂Ta₂O₆ nanoparticles", *Journal of Physics and Chemistry of Solids*, 2013, Vol. 74, pp. 1708-1713
389. Q. L. Tay, X. F. Liu, Y. X. Tang, Z. L. Jiang, T. C. Sum, Z. Chen "Enhanced Photocatalytic Hydrogen Production with Synergistic Two-Phase Anatase/Brookite TiO₂ Nanostructures", *The Journal of Physical Chemistry C*, 2013, Vol. 117, pp. 14973-14982
390. B. Yuan, Y. Wang, H. D. Bian, T. K. Shen, Y. C. Wu, Z. Chen "Nitrogen doped TiO₂ nanotube arrays with high photoelectrochemical activity for photocatalytic applications", *Applied Surface Science*, 2013, Vol. 280, pp. 523-529
391. A. Sharif, J. Z. Lim, R. I. Made, F. L. Lau, E. J. R. Phua, J. D. Lim, C. C. Wong, C. L. Gan, Z. Chen "Pb-Free Glass Paste - A Metallization-Free Die-Attachment Solution for High-Temperature Application on Ceramic Substrates", *Journal of Electronic Materials*, 2013, Vol. 42, pp. 2667-2676
392. X. S. Tang, Q. L. Tay, Z. Chen, Y. Chen, G. K. L. Goh, J. M. Xue "Cu-In-Zn-S nanoporous spheres for highly efficient visible-light-driven photocatalytic hydrogen evolution", *New Journal of Chemistry*, 2013, Vol. 37, pp. 1878-1882
393. J. K. Gao, S. W. Cao, Q. L. Tay, Y. Liu, L. M. Yu, K. Q. Ye, P. S. M. Choon, Y. X. Li, R. Ganguly, S. C. J. Loo, Z. Chen, Y. Zhao, C. Xue, Q. C. Zhang "Molecule-Based Water-Oxidation Catalysts (WOCs): Cluster-Size-Dependent Dye-Sensitized Polyoxometalates for Visible-Light-Driven O₂ Evolution", *Scientific Reports*, 2013, Vol. 3, Article 1853
394. X. S. Tang, Q. L. Tay, Z. Chen, Y. Chen, G. K. L. Goh, J. M. Xue "CuInZnS-decorated graphene nanosheets for highly efficient visible-light-driven photocatalytic hydrogen production", *Journal of Materials Chemistry A*, 2013, Vol. 1, pp. 6359-6365
395. Y. X. Tang, Z. L. Jiang, G. C. Xing, A. R. Li, P. D. Kanhere, Y. Y. Zhang, T. C. Sum, S. Z. Li, X. D. Chen, Z. L. Dong, Z. Chen "Efficient Ag@AgCl Cubic Cages Photocatalyst Profit from Ultrafast Plasmon-induced Electron Transfer Process", *Advanced Functional Materials*, 2013, Vol. 23, pp. 2932-2940
396. A. S. Ganapathi, S. C. Joshi, Z. Chen "Bleeder Thickness Optimization for Controlling Resin Content in Thick Laminated Composites", *Advanced Materials Research*, 2013, Vol. 740, pp. 698-703
397. V. V. Kulish, M.-F. Ng, O. I. Malyi, P. Wu, Z. Chen "Improved Binding and Stability in Si/CNT Hybrid Nanostructures via Interfacial Functionalization: A First-Principles Study", *RSC Advances*, 2013, Vol. 3, pp. 8446-8453
398. L. Shen, P. Lu, S. J. Wang, Z. Chen "Creep Behaviour of Eutectic SnBi Alloy and Its Constituent Phases Using Nanoindentation Technique", *Journal of Alloys and Compounds*, 2013, Vol. 574, pp. 98-103
399. Z. A. Umar, R. S. Rawat, K. S. Tan, A. K. Kumar, R. Ahmad, C. Kloc, Z. Chen, L. Shen, Z. Zhang "Hard TiC_x/SiC/a-C:H nanocomposite thin films using pulsed high energy density plasma focus device", *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, 2013, Vol. 301, pp. 53-61
400. V. V. Kulish, M.-F. Ng, O. I. Malyi, P. Wu, Z. Chen "Enhanced Li Adsorption and Diffusion in Single-Walled Silicon Nanotubes: An ab Initio Study", *ChemPhysChem*, 2013, Vol. 14, pp. 1161-1167
401. Y. Y. Zhang, Y. X. Tang, X. F. Liu, Z. L. Dong, H. H. Hng, Z. Chen, T. C. Sum, X. Chen "Three-Dimensional CdS-Titanate Composite Nanomaterials for Enhanced Visible-Light-Driven Hydrogen Evolution", *Small*, 2013, Vol. 9, pp. 996-1002
402. Y. Yang, J. N. Balaraju, S. C. Chong, H. Xu, C. Q. Liu, V. V. Silberschmidt, Z. Chen "Significantly retarded interfacial reaction between an electroless Ni-W-P metallization and lead-free Sn-3.5Ag solder", *Journal of Alloys and Compounds*, 2013, Vol. 565, pp. 11-16
403. R. I. Made, E. J. R. Phua, S. S. Pramana, C. C. Wong, Z. Chen, A. I. Y. Tok, C. L. Gan "Improved Mechanical and Thermomechanical Properties of Alumina Substrate via Iron Doping", *Scripta Materialia*, 2013, Vol. 68, pp. 869-872
404. P. H. Wang, Y. X. Tang, Z. L. Dong, Z. Chen, T.-T. Lim "Ag-AgBr/TiO₂/RGO nanocomposite for visible-light photocatalytic degradation of penicillin G", *Journal of Materials Chemistry A*, 2013, Vol. 1, pp. 4718-4727
405. O. I. Malyi, V. V. Kulish, K. W. Bai, P. Wu, Z. Chen "A computational study of the effect of alloying additions on the stability of Ni/c-ZrO₂ interfaces", *Surface Science*, 2013, Vol. 611, pp. 5-9
406. V. V. Kulish, O. I. Malyi, M.-F. Ng, P. Wu, Z. Chen "Enhanced Li Adsorption and Diffusion in Silicon Nanosheets Based on First Principles Calculations", *RSC Advances*, 2013, Vol. 3, pp. 4231-4236
407. S. J. Xiong, Y. X. Tang, H. Y. S. Ng, X. X. Zhao, Z. L. Jiang, Z. Chen, K. W. Ng, S. C. J. Loo "Specific surface area of titanium dioxide (TiO₂) particles influences cyto- and photo-toxicity", *Toxicology*, 2013, Vol. 304, pp. 132-140

- 408.A. B. Y. Lim, A. C. K. Chang, C. X. Lee, O. Yauw, B. Chylak, Z. Chen "Palladium-coated and Bare Copper Wire Study for Ultra Fine Pitch Wire Bonding", *ECS Transactions*, 2013, Vol. 52, pp. 717-730
- 409.A. S. Ganapathi, S. C. Joshi, Z. Chen "Simulation of Bleeder Flow and Curing of Thick Composites with Pressure and Temperature-dependent Properties", *Simulation Modelling Practice & Theory*, 2013, Vol. 32, pp. 64-82
- 410.O. I. Malyi, Z. Chen, V. Kulish, K. W. Bai, P. Wu "Density functional theory study of the effects of alloying additions on sulfur adsorption on nickel surfaces", *Applied Surface Science*, 2013, Vol. 264, pp. 320-328
- 411.L. Shen, Z. Y. Tan, Z. Chen "Nanoindentation study on the creep resistance of SnBi solder alloy with reactive nano-metallic fillers", *Materials Science and Engineering A*, 2013, Vol. 561, pp. 232-238
- 412.Y. X. Tang, X. H. Rui, Y. Y. Zhang, T. M. Lim, Z. L. Dong, H. H. Hng, X. D. Chen, Q. Y. Yan, Z. Chen "Vanadium Pentoxide Cathode Materials for High-performance Lithium-ion Batteries Enabled by Hierarchical Nanoflower Structure via An Electrochemical Process", *Journal of Materials Chemistry A*, 2013, Vol. 1, pp. 82-88

2012

- 413.P. D. Kanhere, J. Nisar, Y. X. Tang, B. Pathak, R. Ahuja, J. W. Zheng, Z. Chen "Electronic Structure, Optical Properties, and Photocatalytic Activities of LaFeO₃-NaTaO₃ Solid Solution", *The Journal of Physical Chemistry C*, 2012, Vol. 116, pp. 22767-22773
- 414.X. P. Wang, Y. X. Tang, Z. Chen, T.-T. Lim "Highly stable heterostructured Ag-AgBr/TiO₂ composite: A bifunctional visible-light active photocatalyst for destruction of ibuprofen and bacteria", *Journal of Materials Chemistry*, 2012, Vol. 22, pp. 23149-23158
- 415.Y. H. Cheng, V. P. Subramaniam, D. G. Gong, Y. X. Tang, J. Highfield, S. O. Pehkonen, P. Pichat, M. K. Schreyer, Z. Chen "Nitrogen-sensitized Dual Phase Titanate/Titania for Visible-light Driven Phenol Degradation", *Journal of Solid State Chemistry*, 2012, Vol. 196, pp. 518-527
- 416.Y. X. Tang, Z. L. Jiang, Q. L. Tay, J. Y. Deng, Y. K. Lai, D. G. Gong, Z. L. Dong, Z. Chen "Visible-Light Plasmonic Photocatalyst Anchored on Titanate Nanotubes: A Novel Nanohybrid with Synergistic Effect of Adsorption and Degradation", *RSC Advances*, 2012, Vol. 2, pp. 9406-9414
- 417.L. Shen, P. Septiwerdani, Z. Chen "Elastic modulus, hardness and creep performance of SnBi alloys using nanoindentation", *Materials Science and Engineering A*, 2012, Vol. 558, pp. 253-258
- 418.W. S. Liu, K. L. Koh, J. L. Lu, L. P. Yang, S. L. Phua, J. H. Kong, Z. Chen, X. H. Lu "Simultaneous catalyzing and reinforcing effects of imidazole-functionalized graphene in anhydride-cured epoxies", *Journal of Materials Chemistry*, 2012, Vol. 22, pp. 18395-18402
- 419.P. C. Goh, K. Yao, Z. Chen "Reaction Mechanisms of Ethylenediaminetetraacetic Acid and Diethanolamine in the Precursor Solution for Producing (K,Na)NbO₃ Thin Films with Outstanding Piezoelectric Properties", *The Journal of Physical Chemistry C*, 2012, Vol. 116, pp. 15550-15556
- 420.Y. Liu, P. D. Kanhere, Y. S. Hoo, K. Q. Ye, Q. Y. Yan, R. S. Rawat, Z. Chen, J. Ma, Q. C. Zhang "Cationic Quaternary Chalcogenide Nanobelts: Hg₄In₂Q₃Cl₈ (Q = S, Se, Te)", *RSC Advances*, 2012, Vol. 2, pp. 6401-6403
- 421.D. G. Gong, W. C. J. Ho, Y. X. Tang, Q. L. Tay, Y. K. Lai, J. G. Highfield, Z. Chen "Silver Decorated Titanate/Titania Nanostructures for Efficient Solar Driven Photocatalysis", *Journal of Solid State Chemistry*, 2012, Vol. 189, pp. 117-122
- 422.O. I. Malyi, K. W. Bai, V. V. Kulish, P. Wu, Z. Chen "Density functional theory study of sulfur tolerance of copper: New copper-sulfur phase diagram", *Chemical Physics Letters*, 2012, Vol. 533, pp. 20-24
- 423.O. I. Malyi, P. Wu, V. V. Kulish, K. W. Bai, Z. Chen "Formation and migration of oxygen and zirconium vacancies in cubic zirconia and zirconium oxysulfide", *Solid State Ionics*, 2012, Vol. 212, pp. 117-122
- 424.Y. K. Lai, Y. X. Tang, J. J. Gong, D. G. Gong, L. F. Chi, C. J. Lin, Z. Chen "Transparent superhydrophobic / superhydrophilic TiO₂-based coatings for self-cleaning and anti-fogging", *Journal of Materials Chemistry*, 2012, Vol. 22, pp. 7420-7426
- 425.P. Kanhere, J. W. Zheng, Z. Chen "Visible Light Driven Photocatalytic Hydrogen Evolution and Photophysical properties of Bi³⁺ Doped NaTaO₃", *International Journal of Hydrogen Energy*, 2012, Vol. 37, pp. 4889-4896
- 426.Y. X. Tang, P. X. Wee, Y. K. Lai, X. P. Wang, D. G. Gong, P. D. Kanhere, T. T. Lim, Z. L. Dong, Z. Chen "Hierarchical TiO₂ Nanoflakes and Nanoparticles Hybrid Structure for Improved Photocatalytic Activity", *The Journal of Physical Chemistry C*, 2012, Vol. 116, pp. 2772-2780
- 427.Y. X. Tang, Z. L. Jiang, J. Y. Deng, D. G. Gong, Y. K. Lai, H. T. Tay, I. T. K. Joo, T. H. Lau, Z. L. Dong, Z. Chen "Synthesis of Nano-Structured Silver/Silver Halides on Titanate Surfaces and Their Visible Light Photocatalytic Performance", *ACS Applied Materials & Interfaces*, 2012, Vol. 4, pp. 438-446
- 428.H. Yan, R. N. Santoso, Y. Y. Jiang, M. H. Liang, Z. Chen "Effect of oxygen concentration on the thermal stability of magnetron sputtered amorphous Ta-Ni thin films", *Thin Solid Films*, 2012, Vol. 520, pp. 2356-2361
- 429.H. Yan, Y. Y. Tay, Y. Y. Jiang, N. Yantara, J. S. Pan, M. H. Liang, Z. Chen "Copper Diffusion Barrier Performance of Amorphous Ta-Ni Thin Films", *Applied Surface Science*, 2012, Vol. 258, pp. 3158-3162
- 430.L. Shen, W. C. D. Cheong, Y. L. Foo, Z. Chen "Nanoindentation creep of tin and aluminium: A comparative study between constant load and constant strain rate methods", *Materials Science and Engineering A*, 2012, Vol. 532, pp. 505-510

2011

431. Y. K. Lai, Z. Chen, C. J. Lin "Recent progress on the superhydrophobic surfaces with special adhesion: From natural to biomimetic to functional", *Journal of Nanoengineering and Nanomanufacturing*, 2011, Vol. 1, pp. 18-34
432. K. Mohan, T. H. Yip, S. Idapalapati, Z. Chen "Impact response of aluminum foam core sandwich structures", *Materials Science and Engineering A*, 2011, Vol. 259, pp. 94-101
433. Y. Y. Zhang, Y. X. Tang, S. Y. Yin, Z. Y. Zeng, H. Zhang, C. M. Li, Z. L. Dong, Z. Chen, X. D. Chen "Hierarchical Protonated Titanate Nanostructures for Lithium-ion Batteries", *Nanoscale*, 2011, Vol. 3, pp. 4074-4077
434. H. Xu, V. L. Acoff, C. Liu, V. V. Silberschmidt, Z. Chen "Facilitating intermetallic formation in wire bonding by applying a pre-ultrasonic energy", *Microelectronic Engineering*, 2011, Vol. 88, pp. 3155-3157
435. Y. X. Tang, J. Tao, Z. L. Dong, J. T. Oh, Z. Chen "Formation of micro-meter-long TiO₂ nanotube arrays by anodization of titanium film on conducting glass substrate", *Advances in Natural Sciences: Nanoscience and Nanotechnology*, 2011, Vol. 2, Article 045002
436. H. Xu, C. Liu, V. V. Silberschmidt, S. S. Pramana, T. J. White, Z. Chen, V. L. Acoff "Intermetallic phase transformations in Au-Al wire bonds", *Intermetallics*, 2011, Vol. 19, pp. 1808-1816
437. P. C. Goh, K. Yao, Z. Chen "Lithium diffusion in (Li, K, Na)NbO₃ piezoelectric thin films and the resulting approach for enhanced performance properties", *Applied Physics Letters*, 2011, Vol. 99 (9), Article 092902
438. H. Xu, C. Liu, V. V. Silberschmidt, S. S. Pramana, T. J. White, Z. Chen, V. L. Acoff "New mechanisms of void growth in Au-Al wire bonds: volumetric shrinkage and intermetallic oxidation", *Scripta Materialia*, 2011, Vol. 65, pp. 642-645
439. O. I. Malyi, Z. Chen, G. G. Shu, P. Wu "Effect of sulfur impurity on the stability of cubic zirconia and its interfaces with metals", *Journal of Materials Chemistry*, 2011, Vol. 21, pp. 12363-12368
440. D. G. Gong, V. P. Subramaniam, J. G. Highfield, Y. X. Tang, Y. K. Lai, Z. Chen "In Situ Mechanistic Investigation at the Liquid/Solid Interface by ATR-FTIR: Ethanol Photo-oxidation over Pristine and Platinized TiO₂ (P25)", *ACS Catalysis*, 2011, Vol. 1 (8), pp. 864-871
441. Y. X. Tang, V. P. Subramaniam, T. H. Lau, Y. K. Lai, D. G. Gong, P. D. Kanhere, Y. H. Cheng, Z. Chen, Z. L. Dong "In situ Formation of Large-scale Ag/AgCl Nanoparticles on Layered Titanate Honeycomb by Gas Phase Reaction for Visible Light Degradation of Phenol Solution", *Applied Catalysis B: Environmental*, 2011, Vol. 106, pp. 577-585
442. H. Xu, C. Liu, V. V. Silberschmidt, S. S. Pramana, T. J. White, Z. Chen, V. L. Acoff "Behavior of aluminum oxide, intermetallics and voids in Cu-Al wire bonds", *Acta Materialia*, 2011, Vol. 59, pp. 5661-5673
443. Y. K. Lai, Y. X. Tang, J. Y. Huang, H. Wang, H. Q. Li, D. G. Gong, X. B. Ji, J. J. Gong, C. J. Lin, L. Sun, Z. Chen "Multi-functional Hybrid Protonated Titanate Nanobelts with Tunable Wettability", *Soft Matter*, 2011, Vol. 7, pp. 6313-6319
444. P. D. Kanhere, J. W. Zheng, Z. Chen "Site Specific Optical and Photocatalytic Properties of Bi Doped NaTaO₃", *The Journal of Physical Chemistry C*, 2011, Vol. 115, pp. 11846-11853
445. D. S. R. Krishna, Y. Sun, Z. Chen "Magnetron Sputtered TiO₂ Films on Stainless Steel Substrate: Selective Rutile Phase Formation and Its Tribological and Anti-corrosion Performance", *Thin Solid Films*, 2011, Vol. 519 (15), pp. 4860-4864
446. Y. K. Lai, Z. Chen, C. J. Lin "A review on the recent progress in the superhydrophobic surfaces with special adhesions", *Scientia Sinica Chimica*, 2011, Vol. 41 (4), pp. 609-628 (in Chinese)
447. H. Xu, C. Liu, V. V. Silberschmidt, Z. Chen, V. L. Acoff "Effect of ultrasonic energy on nanoscale interfacial structure in copper wire bonding on aluminium pads", *Journal of Physics D: Applied Physics*, 2011, Vol. 44, 145301
448. Y. H. Cheng, Y. Z. Huang, P. D. Kanhere, V. P. Subramaniam, D. G. Gong, S. Zhang, J. Highfield, M. K. Schreyer, Z. Chen "Dual phase titanate/anatase with nitrogen doping for enhanced degradation of organic dye under visible light", *Chemistry – A European Journal*, 2011, Vol. 17, pp. 2575-2578
449. H. Xu, C. Liu, V. V. Silberschmidt, Z. Chen, J. Wei, M. Sivakumar "Effect of bonding duration and substrate temperature in copper ball bonding on aluminium pads: a TEM study of interfacial evolution", *Microelectronics Reliability*, 2011, Vol. 51, pp. 113-118
450. L. Y. L. Wu, S. K. Ngian, Z. Chen, D. T. T. Xuan "Quantitative Test Method for Evaluation of Anti-Fingerprint Property of Coated Surfaces", *Applied Surface Science*, 2011, Vol. 257, pp. 2965-2969
451. A. Kumar, Z. Chen "Interdependent Intermetallic Compound Growth in an Electroless Ni-P/Sn-3.5Ag Reaction Couple", *Journal of Electronic Materials*, 2011, Vol. 40, pp. 213-223

2010

452. H. Xu, C. Liu, V. V. Silberschmidt, S. S. Pramana, T. J. White, Z. Chen, M. Sivakumar, V. L. Acoff "A micromechanism study of thermosonic gold wire bonding on aluminium pad", *Journal of Applied Physics*, 2010, Vol. 108 (11), Article 113517

453. Y. W. L. Lim, Y. X. Tang, Y. H. Cheng, Z. Chen "Morphology, Crystal Structure and Adsorption Performance of Hydrothermally Synthesized Titania and Titanate Nanostructures", *Nanoscale*, 2010, Vol. 2, pp. 2751-2757
454. Y. X. Tang, D. G. Gong, Y. K. Lai, Y. Q. Shen, Y. Y. Zhang, Y. Z. Huang, J. Tao, C. J. Lin, Z. L. Dong, Z. Chen "Hierarchical Layered Titanate Microspherulite: Formation by Electrochemical Spark Discharge Spallation and Application in Aqueous Pollutant Treatment", *Journal of Materials Chemistry*, 2010, Vol. 20 (45), pp. 10169-10178
455. Y. K. Lai, J. Y. Huang, H. F. Zhang, V. P. Subramaniam, Y. X. Tang, D. G. Gong, L. Sundar, L. Sun, Z. Chen, C. J. Lin "Nitrogen-doped TiO₂ nanotube array films with enhanced photocatalytic activity under various light sources", *Journal of Hazardous Materials*, 2010, Vol. 184, pp. 855-863
456. Y. Liu, P. D. Kanhere, C. L. Wong, Y. F. Tian, Y. H. Feng, F. Boey, H. Y. Chen, T. J. White, Z. Chen, Q. C. Zhang "Hydrazine-hydrothermal Method to Synthesize Three-dimensional Chalcogenide Framework for Photocatalytic Hydrogen Generation", *Journal of Solid State Chemistry*, 2010, Vol. 183, pp. 2644-2649
457. P. C. Goh, K. Yao, Z. Chen "Lead-free piezoelectric (K_{0.5}Na_{0.5})NbO₃ thin films derived from chemical solution modified with stabilizing agents", *Applied Physics Letters*, 2010, Vol. 97 (10), Article 102901
458. X.-Z. Ding, X. T. Zeng, X. Y. He, Z. Chen "Tribological properties of Cr- and Ti-doped MoS₂ composite coatings under different humidity atmosphere", *Surface and Coatings Technology*, 2010, Vol. 205, pp. 224-231
459. Y. X. Tang, Y. K. Lai, D. G. Gong, K.-H. Goh, T.-T. Lim, Z. L. Dong, Z. Chen "Ultrafast Synthesis of Layered Titanate Micro-Spherulite Particles by Electrochemical Spark Discharge Spallation", *Chemistry – A European Journal*, 2010, Vol. 16, pp. 7704-7708
460. Y. K. Lai, H. F. Zhuang, K. P. Xie, D. G. Gong, Y. X. Tang, L. Sun, C. J. Lin, Z. Chen "Fabrication of Ag/TiO₂ nanotube array structures with enhanced photoelectrochemical performance", *New Journal of Chemistry*, 2010, Vol. 34, pp. 1335-1340
461. C. Wang, Z. Chen, Y. He, L. Li, D. Zhang "Raman scattering of ZnO films prepared by the laser molecular beam epitaxy", *Materials Science-Poland*, 2010, Vol. 28 (1), pp. 153-161
462. J. W. Zheng, A. Bhattacharyya, P. Wu, Z. Chen, J. Highfield, Z. L. Dong, R. Xu "The Origin of Visible Light Absorption in Chalcogen Element (S, Se and Te) Doped Anatase TiO₂ Photocatalyst", *The Journal of Physical Chemistry C*, 2010, Vol. 114 (15), pp. 7063-7069
463. H. Xu, C. Liu, V. V. Silberschmidt, Z. Chen, J. Wei "Initial bond formation in thermosonic gold ball bonding on aluminium metallization pads", *Journal of Materials Processing Technology*, 2010, Vol. 210 (8), pp. 1035-1042
464. Y. K. Lai, Z. Q. Lin, Z. Chen, J. Y. Huang, C. J. Lin "Fabrication of patterned CdS/TiO₂ heterojunction by wettability template-assisted electrodeposition", *Materials Letters*, 2010, Vol. 64 (11), pp. 1309-1312
465. Y. K. Lai, Y. X. Huang, J. Y. Huang, H. Wang, Z. Chen, C. J. Lin "Selective formation of ordered arrays of octacalcium phosphate ribbons on TiO₂ nanotube surface by template-assisted electrodeposition", *Colloids and Surfaces B: Biointerfaces*, 2010, Vol. 76 (1), pp. 117-122
466. X. Yi, J. L. Li, Z. Chen, A. Tok "Single Crystalline InVO₄ Nanotubes by Self-Template-Directed Fabrication", *Journal of The American Ceramic Society*, 2010, Vol. 93 (2), pp. 596-600
467. S. Z. Y. Loo, P. C. Lee, Z. X. Lim, N. Yantara, T. Y. Tee, C. M. Tan, Z. Chen "Interface fracture toughness assessment of solder joints using double cantilever beam test", *International Journal of Modern Physics B*, 2010, Vol. 24 (1-2), pp. 164-174
468. H. Xu, C. Liu, V. V. Silberschmidt, Z. Chen, J. Wei "The role of bonding duration in wire bond formation: A study of footprints of thermosonic gold wire on aluminium pad", *Microelectronics International*, 2010, Vol. 27 (1), pp. 11-16
469. H. Xu, C. Liu, V. V. Silberschmidt, Z. Chen "Growth of intermetallic compounds in thermosonic copper wire bonding on aluminium metallization", *Journal of Electronic Materials*, 2010, Vol. 39 (1), pp. 124-131
470. Y. K. Lai, Z. Q. Lin, J. Y. Huang, L. Sun, Z. Chen, C. J. Lin "Controllable construction of ZnO/TiO₂ patterning nanostructures by superhydrophilic-superhydrophobic template", *New Journal of Chemistry*, 2010, Vol. 34, pp. 44-51

2009

471. C. Z. Wang, Z. Chen, H. Q. Hu, D. Zhang "Effect of the oxygen pressure on the microstructure and optical properties of ZnO films prepared by laser molecular beam epitaxy", *Physica B-Condensed Matter*, 2009, Vol. 21, pp. 4075-4082
472. Y. K. Lai, Y. C. Chen, Y. X. Tang, D. G. Gong, Z. Chen, C. J. Lin "Electrophoretic Deposition of Titanate Nanotube Films with Extremely Large Wetting Contrast", *Electrochemistry Communications*, 2009, Vol. 11, pp. 2268-2271
473. Y. K. Lai, J. Y. Huang, J. J. Gong, Y. X. Huang, C. L. Wang, Z. Chen, C. J. Lin "Superhydrophilic-Superhydrophobic Template: A Simple Approach to Micro- and Nanostructure Patterning of TiO₂ Films", *Journal of The Electrochemical Society*, 2009, Vol. 156 (11), pp. D480-D484
474. Y. K. Lai, H. F. Zhuang, L. Sun, Z. Chen, C. J. Lin "Self-organized TiO₂ Nanotubes in Mixed Organic-inorganic Electrolytes and Their Photoelectrochemical Performance", *Electrochimica Acta*, 2009, Vol. 54, pp. 6536-6542

475. J. G. Highfield, M. H. Chen, P. T. Nguyen, Z. Chen "Mechanistic investigations of photo-driven processes over TiO₂ by in-situ DRIFTS-MS: Part I: platinization and methanol reforming", *Energy & Environmental Science*, 2009, Vol. 2, pp. 991-1002
476. P. C. Goh, K. Yao, Z. Chen "Titanium diffusion into (K_{0.5}Na_{0.5})NbO₃ ferroelectric thin films deposited on Pt/Ti/SiO₂/Si substrates and corresponding effects", *Journal of the American Ceramic Society*, 2009, Vol. 92 (6), pp. 1332-1327
477. H. Yan, L. Li, F. Y. Ho, M. H. Liang, J. S. Pan, S. Xu, Z. Chen "Formation and characterization of magnetron sputtered Ta-Si-N-O thin films", *Thin Solid Films*, 2009, Vol. 517 (17), pp. 5207-5211
478. Q. Chen, C. Udomsangpetch, S. C. Shen, Y. C. Liu, Z. Chen, X. T. Zeng "The effect of AlOOH boehmite nanorods on mechanical property of hybrid composite coatings", *Thin Solid Films*, 2009, Vol. 517 (17), pp. 4871-4874
479. L. Y. L. Wu, L. Boon, Z. Chen, X. T. Zeng "Adhesion Enhancement of Sol-Gel Coating on Polycarbonate by Heated Impregnation Treatment", *Thin Solid Films*, 2009, Vol. 517 (17), pp. 4850-4856
480. C. Z. Wang, Z. Chen, Y. He, L. Y. Li, D. Zhang "Structure, morphology and properties of Fe-doped ZnO films prepared by facing-target magnetron sputtering system", *Applied Surface Science*, 2009, Vol. 255 (15), pp. 6881-6887
481. H. Xu, C. Liu, V. V. Silberschmidt, S. S. Pramana, T. J. White, Z. Chen "A re-examination of the mechanism of thermosonic copper ball bonding on aluminium metallization pads", *Scripta Materialia*, 2009, Vol. 61 (2), pp. 165-168
482. X. F. Ang, J. Wei, Z. Chen, C. C. Wong "Enabling Low Temperature Copper Bonding With an Organic Monolayer", *Advanced Materials Research*, 2009, Vol. 74, pp. 133-136
483. X. F. Ong, S. W. Ho, Y. Y. Ong, L. C. Wai, K. Vaidyanathan, Y. K. Lim, D. Yeo, K. C. Chan, J. B. Tan, D. K. Sohn, L. C. Hsia, Z. Chen "Underfill Selection Methodology for Fine Pitch Cu / Low-k FCBGA Packages", *Microelectronics Reliability*, 2009, Vol. 49 (2), pp. 150-162
484. A. Kumar, Y. Yang, C. C. Wong, V. Kripesh, Z. Chen "Effect of Electromigration on the Mechanical Performance of Sn-3.5Ag Solder Joints with Ni and Ni-P Metallizations", *Journal of Electronic Materials*, 2009, Vol. 38 (1), pp. 78-87

2008

485. Y. L. Wu, Z. Chen, X. T. Zeng "Nanoscale Morphology for High Hydrophobicity of a Hard Sol-Gel Thin Film", *Applied Surface Science*, 2008, Vol. 254, pp. 6952-6958
486. Z. Chen, L. Y. L. Wu, E. Chwa, O. Tham "Scratch Resistance of Brittle Thin Films on Compliant Substrates", *Materials Science and Engineering A*, 2008, Vol. 493, pp. 292-298
487. X. Zhang, K. N. Tu, Z. Chen, Y. K. Tan, C. C. Wong, S. G. Mhaisalkar, X. M. Li, C. H. Tung, C. K. Cheng "Pulse Electroplating of Copper Film: A study of Process and Microstructure", *Journal of Nanoscience and Nanotechnology*, 2008, Vol. 8 (5), pp. 2568-2574
488. X. F. Ang, Z. Chen, C. C. Wong, J. Wei "Effect of Chain Length on Low Temperature Gold-Gold Bonding by Self Assembled Monolayers", *Applied Physics Letters*, 2008, Vol. 92 (13), Article 131913
489. P. C. Goh, K. Yao, Z. Chen "Ferroelectric thin films with complex composition of PNN-PZN-PMN-PZ-PT with excess NiO", *Journal of Materials Research*, 2008, Vol. 23 (2), pp. 536-542
490. L. Y. L. Wu, E. Chwa, Z. Chen, X. T. Zeng "A Study Towards Improving Mechanical Properties of Sol-Gel Coatings for Polycarbonate", *Thin Solid Films*, 2008, Vol. 516 (6), pp. 1056-1062

2007

491. G. G. Zhang, X. F. Ang, Z. Chen, C. C. Wong, J. Wei "Critical Temperatures in Thermocompression Gold Stud Bonding", *Journal of Applied Physics*, 2007, Vol. 102 (6), Article 063519
492. X. F. Ang, F. Y. Li, W. L. Tan, Z. Chen, C. C. Wong, J. Wei "Self-assembled Monolayers for Reduced Temperature Direct Metal Thermocompression Bonding", *Applied Physics Letters*, 2007, Vol. 91 (5), Article 061913
493. Q. J. Cheng, J. D. Long, Z. Chen, S. Xu "Chemically active plasmas for deterministic assembly of nanocrystalline SiC film", *Journal of Physics D: Applied Physics*, 2007, Vol. 40 (8), pp. 2304-2307
494. M. X. Gu, C. Q. Sun, Z. Chen, T. C. Au Yeung, S. Li, C. M. Tan, V. Nosik "Size, temperature, and bond nature dependence of elasticity and its derivatives on extensibility, Debye temperature, and heat capacity of nanostructures", *Physical Review B*, 2007, Vol. 75 (12), Article 125403
495. X. Zhang, Z. Chen, K. N. Tu "Immersion Nickel Deposition on Blank Silicon in Aqueous Solution Containing Ammonium Fluoride", *Thin Solid Films*, 2007, Vol. 515, pp. 4696-4701
496. A. Kumar, Z. Chen "Influence of Phosphorus Content on the Interfacial Microstructure between Sn-3.5Ag Solder and Electroless Ni-P Metallization on Cu Substrate", *IEEE Transactions on Advanced Packaging*, 2007, Vol. 30 (1), pp. 68-72
497. Z. Chen, M. He, A. Kumar, G. J. Qi "Effect of Interfacial Reaction on the Tensile Strength of Sn-3.5Ag/Ni-P and Sn-37Pb/Ni-P Solder Joints", *Journal of Electronic Materials*, 2007, Vol. 36 (1), pp. 17-25

- 498.Z. Chen, Z. H. Gan "Fracture Toughness Measurement of Thin Films on Compliant Substrate Using Controlled Buckling Test", *Thin Solid Films*, 2007, Vol. 515, pp. 3305-3309
- 499.Z. H. Gan, A. M. Gusak, W. Shao, Z. Chen, S. G. Mhaisalkar, T. Zaporozhets, K. N. Tu "Analytical Modeling of Reservoir Effect on Electromigration of Cu Interconnects", *Journal of Materials Research*, 2007, Vol. 22 (1), pp. 152-156

2006

- 500.Z. Chen, A. Kumar, Mona "Effect of Phosphorus Content on Cu/Ni-P/Sn-3.5Ag Solder Joint Strength after Multiple Reflow", *Journal of Electronic Materials*, 2006, Vol. 35 (12), pp. 2126-2134
- 501.A. Kumar, Z. Chen "Effect of Ni-P Thickness on the Tensile Strength of Cu/Electroless Ni-P/Sn-3.5Ag Solder Joint", *IEEE Transactions on Components and Packaging Technologies*, 2006, Vol. 29 (4), pp. 886-892
- 502.Y. C. Ee, Z. Chen, S. B. Law, S. Xu, N. L. Yakovlev, D. Lai "Copper diffusion in Ti-Si-N layers formed by inductively coupled plasma implantation", *Applied Surface Science*, 2006, Vol. 253 (2), pp. 530-534
- 503.Z. H. Gan, W. Shao, S. G. Mhaisalkar, Z. Chen, H. Y. Li, K. N. Tu, A. M. Gusak "Reservoir effect and the role of low current density regions on electromigration lifetimes in copper interconnects", *Journal of Materials Research*, 2006, Vol. 21 (9), pp. 2241-2245
- 504.A. V. Vairagar, Z. H. Gan, Wei Shao, S. G. Mhaisalkar, H. Y. Li, K. N. Tu, Z. Chen, E. Zschech, H. J. Engelmann, S. Zhang "Improvement of electromigration lifetime of submicrometer dual-damascene Cu interconnects through surface engineering", *Journal of The Electrochemical Society*, 2006, Vol. 153 (9), pp. G840-G845
- 505.Z. H. Gan, Zhong Chen, S. G. Mhaisalkar, Zhe Chen, K. Prasad, Sam Zhang, N. Jiang "Effect of electron beam treatment on adhesion of Ta/polymeric low-k interface," *Applied Physics Letters*, 2006, Vol. 88 (23), Article 233510
- 506.L. Y. L. Wu, G. H. Tan, X. T. Zeng, T. H. Li, Z. Chen "Synthesis and Characterization of Transparent Hydrophobic Sol-Gel Hard Coatings", *Journal of Sol-Gel Science and Technology*, 2006, Vol. 38 (1), pp. 85-89
- 507.Y. C. Ee, J. S. Juneja, P.-I. Wang, T.-M. Lu, H. Bakhru, L. Chan, S. B. Law, C. Yong, Z. Chen, S. Xu "Bias-temperature Stability of Ti-Si-N-O films", *Journal of The Electrochemical Society*, 2006, Vol. 153 (5), pp. G470-G474
- 508.A. Kumar, Z. Chen "Influence of Solid-State Interfacial Reactions on the Tensile Strength of Cu/Electroless Ni-P/Sn-3.5Ag Solder Joint", *Materials Science and Engineering A*, 2006, Vol. 423 (1-2), pp. 175-179
- 509.Z. Chen, M. He, B. Balakrisnan, C. C. Chum "Elasticity modulus, hardness and fracture toughness of Ni₃Sn₄ intermetallic thin films", *Materials Science and Engineering A*, 2006, Vol. 423 (1-2), pp. 107-110
- 510.Z. Chen, A. Ng, J. Z. Yi, X. F. Chen "Multi-layered Electroless Ni-P Coatings on Powder-Sintered Nd-Fe-B Permanent Magnet", *Journal of Magnetism and Magnetic Materials*, 2006, Vol. 302 (1), pp. 216-222
- 511.E. Chwa, L. Wu, Z. Chen "Factors towards Pencil Scratch Resistance of Protective Sol-Gel Coatings on Polycarbonate Substrate", *Key Engineering Materials*, 2006, Vol. 312, pp. 339-344
- 512.Z. H. Gan, W. Shao, S. G. Mhaisalkar, Z. Chen, H. Y. Li "The influence of temperature and dielectric materials on stress induced voiding in Cu dual damascene interconnects", *Thin Solid Films*, 2006, Vol. 504 (1-2), pp. 161-165
- 513.X. F. Ang, G. G. Zhang, J. Wei, Z. Chen, C. C. Wong "Temperature and pressure dependence in thermocompression gold stud bonding", *Thin Solid Films*, 2006, Vol. 504 (1-2), pp. 379-383
- 514.L. C. Chin, X. F. Ang, J. Wei, Z. Chen, C. C. Wong "Enhancing direct metal bonding with self-assembled monolayers", *Thin Solid Films*, 2006, Vol. 504 (1-2), pp. 367-370
- 515.W. Shao, Z.H. Gan, S.G. Mhaisalkar, Z. Chen, H. Y. Li "The effect of line width on stress-induced voiding in Cu dual damascene interconnects", *Thin Solid Films*, 2006, Vol. 504 (1-2), pp. 298-301
- 516.Y. C. Ee, Z. Chen, S. B. Law, S. Xu "Formation and characterization of Ti-Si-N-O barrier films", *Thin Solid Films*, 2006, Vol. 504 (1-2), pp. 218-222
- 517.A. Kumar, Z. Chen, S. Mhaisalkar, C. C. Wong, P. S. Teo, V. Kripesh "Effect of Ni-P Thickness on Solid-State Interfacial Reactions between Sn-3.5Ag Solder and Electroless Ni-P Metallization on Cu Substrate", *Thin Solid Films*, 2006, Vol. 504 (1-2), pp. 410-415
- 518.Y. C. Ee, Z. Chen, T.-M. Lu, Z. L. Dong, S. B. Law "Low temperature physical-chemical vapor deposition of Ti-Si-N-O barrier films", *Electrochemical and Solid-State Letters*, 2006, Vol. 9 (3), pp. G100-G103
- 519.Z. H. Gan, S. G. Mhaisalkar, Zhong Chen, Zhe Chen, K. Prasad, S. Zhang, M. Damayanti, N. Jiang "Modification of Ta/Polymeric Low-k Interface by Electron Beam Treatment", *Journal of The Electrochemical Society*, 2006, Vol. 153 (1), pp. G30-G34

2005

- 520.Y. C. Ee, Z. Chen, L. Chan, K. H. See, S. B. Law, S. Xu, Z. L. Tsakadze, P.P. Rutkevych, K. Y. Zeng, L. Shen "Formation of Ti-Si-N film using low frequency, high density inductively coupled plasma process", *Journal of Vacuum Science & Technology B*, 2005, Vol. 23, pp. 2444-2448

521. Y. C. Ee, Z. Chen, D. Z. Chi, W. D. Wang, S. Xu, S. B. Law "Barrier Property of TiSiN Films Formed by Low Frequency High Density Inductively Coupled Plasma Process", *Surface and Coatings Technology*, 2005, Vol. 198, pp. 291-295
522. S. P. Chong, Y. C. Ee, Z. Chen, S. B. Law "Electroless Copper Seed Layer Deposition on Tantalum Nitride Barrier Film", *Surface and Coatings Technology*, 2005, Vol. 198, pp. 287-290
523. Z. H. Gan, S. Mhaisalkar, Zhong Chen, S. Zhang, Zhe Chen, K. Prasad "Study of Interfacial Adhesion Energy of Multi-layered ULSI Thin Film Structures Using Four-point Bending Test", *Surface and Coatings Technology*, 2005, Vol. 198, pp. 85-89
524. A. Kumar, M. He, Z. Chen "Barrier Properties of Thin Au/Ni-P Under Bump Metallization for Sn-3.5Ag solder", *Surface and Coatings Technology*, 2005, Vol. 198, pp. 283-286
525. M. He, Z. Chen, G. J. Qi "Mechanical Strength of Thermal Aged Sn-3.5Ag/Ni-P Solder Joints", *Metallurgical and Materials Transactions A*, 2005, Vol. 36A, pp. 65-75

2004

526. Z. Chen, M. He, G. Qi "Morphology and Kinetic Study of Interfacial Reaction between SnAg3.5 Solder and Electroless Ni-P Metallization", *Journal of Electronic Materials*, 2004, Vol. 33, pp. 1465-1472
527. M. He, W. H. Lau, G. J. Qi, Z. Chen "Intermetallic Compound Formation between Sn-3.5Ag Solder and Ni-Based Metallization during Liquid State Reaction", *Thin Solid Films*, 2004, Vol. 462, pp. 376-383
528. M. He, Z. Chen, G. J. Qi, C. C. Wong, S. Mhaisalkar "Effect of Post Reflow Cooling Rate on Intermetallic Compound Formation between Sn-3.5Ag Solder and Ni-P Under Bump Metallization", *Thin Solid Films*, 2004, Vol. 462, pp. 363-369
529. M. He, A. Kumar, P. T. Yeo, G. J. Qi, Z. Chen "Interfacial Reaction between Sn-Rich Solders and Ni-Based Metallization", *Thin Solid Films*, 2004, Vol. 462, pp. 387-394
530. A. Kumar, M. He, Z. Chen, P. S. Teo "Effect of Electromigration on Interfacial Reactions between Electroless Ni-P and Sn3.5Ag Solder", *Thin Solid Films*, 2004, Vol. 462, pp. 413-418
531. Y. C. Ee, Z. Chen, L. Chan, A. K. H. See, S. B. Law, K. C. Tee, K. Y. Zeng, L. Shen "Effect of Processing Parameters on Electroless Cu Seed Layer Properties", *Thin Solid Films*, 2004, Vol. 462, pp. 197-201
532. L. K. Teh, E. Anto, C. C. Wong, S. G. Mhaisalkar, E. H. Wong, P. S. Teo, Z. Chen "Development and Reliability of Non-Conductive Adhesive Flip-Chip Packages", *Thin Solid Films*, 2004, Vol. 462, pp. 446-453
533. Y. C. Ee, Z. Chen, S. Xu, L. Chan, K. H. See, S. B. Law "Electroless Copper Deposition as a Seed Layer on TiSiN Barrier", *Journal of Vacuum Science & Technology A*, 2004, Vol. 22, pp. 1852-1856
534. M. He, Z. Chen, G. Qi "Solid state interfacial reaction of Sn-37Pb and Sn-3.5Ag solders with Ni-P under bump metallization", *Acta Materialia*, 2004, Vol. 52, pp. 2047-2056

2003 – 2000

535. B. Balakrishnan, C. C. Chum, M. Li, Z. Chen, T. Cahyadi "Fracture toughness of Cu-Sn intermetallic thin films", *Journal of Electronic Materials*, 2003, Vol. 32, pp. 166-171
536. Z. Chen, X. Xu, C. C. Wong, S. Mhaisalkar "Effect of Plating Parameters on the Intrinsic Stress in Electroless Nickel Plating", *Surface and Coatings Technology*, 2003, Vol. 167, pp. 170-176
537. B. Cotterell, Z. Chen, J. B. Han, N. X. Tan "The Strength of the Silicon Die in Flip Chip Assemblies", *Journal of Electronic Packaging*, 2003, Vol. 125, pp. 114-119
538. A. G. Atkins, Z. Chen, B. Cotterell "Prediction of the Energy Dissipation Rate in Ductile Crack Propagation", *Fatigue & Fracture of Engineering Materials & Structures*, 2003, Vol. 26, pp. 67-77
539. Z. Chen "The Root Angle in Elastoplastic Peeling Tests", *Key Engineering Materials*, 2002, Vol. 227, pp. 41-48
540. Z. Chen, B. Cotterell, W. Wang "The Fracture of Brittle Thin Films on Compliant Substrate in Flexible Displays", *Engineering Fracture Mechanics*, 2002, Vol. 69, pp. 597-603
541. Z. Chen, B. Cotterell, W. Wang, E. Guenther, S. J. Chua "A Mechanical Assessment of Flexible Optoelectronic Devices", *Thin Solid Films*, 2001, Vol. 394, pp. 202-206
542. B. Cotterell, Z. Chen "Buckling and Cracking of Thin Films on Compliant Substrate under Compression", *International Journal of Fracture*, 2000, Vol. 104, pp. 169-179
543. B. Cotterell, Z. Chen "Buckling and Fracture of Thin Films under Compression", *Key Engineering Materials*, 2000, Vol. 183-1, pp. 187-192

Before 2000

544. Z. Chen, B. Cotterell, W. T. Chen "Characterizing the Interfacial Fracture Toughness for Microelectronic Packaging", *Surface and Interface Analysis*, 1999, Vol. 28, pp. 146-149
545. A. G. Atkins, Z. Chen, B. Cotterell "The Essential Work of Fracture and J_R Curves for the Double Cantilever Beam Specimen: An Examination of Elastoplastic Crack Propagation", *Proceedings of The Royal Society A: Mathematical, Physical and Engineering Sciences*, 1998, Vol. 454, pp. 815-833
546. B. Cotterell, Z. Chen "The Blister Test – Transition from Plate to Membrane Behaviour for an Elastic Material", *International Journal of Fracture*, 1997, Vol. 86, pp. 191-198

547. T. Xie, Z. Chen “Effect of Normalizing Treatments of Forged Microalloyed Medium Carbon Steel 35MnVN on Its Strength and Toughness”, *Hot Working Technology*, 1996, No.1, pp. 44-45 (in Chinese)
- 548.Z. Chen, Z. S. Zhu, Z. Y. Deng, H. F. Ding, G. F. Yuan, S. Y. Xu “The Fracture Toughness and Fracture Mechanisms of Medium-carbon Micro-alloyed Steels”, *Hot Working Technology*, 1991, No.4, pp. 10-15 (in Chinese)
- 549.Z. Chen, Z. Y. Deng “In-situ Study of Ductile Fracture Mechanisms in a Micro-alloyed Medium Carbon Steel”, *Physical Testing and Chemical Analysis Part A: Physical Testing*, 1991, Vol. 27(5), pp. 8-11 (in Chinese)
- 550.Z. Y. Deng, Z. Chen, H. F. Ding, C. M. Wang, T. Xie “The Analysis of Fracture Toughness of Forged Microalloyed 35MnVN Steel”, *Iron Steel Vanadium Titanium*, 1987, Vol. 8(2), pp. 22-27 (in Chinese)

Conference Proceedings and Presentations

- ◇ Over 300 conference papers / presentations.