NAME Chen, Zhong (**Highly Cited Researcher by Clarivate; Top 2% Scientist by Stanford/Elsevier**) | Personal Website | Google Scholar |

CURRENT POSITION AND PAST EMPLOYMENT HISTORY

◊ Mar 2000 - present: Professor / Associate Professor / Assistant Professor, School of Materials Science & Engineering, Nanyang Technological University, Singapore.

◊ Apr 1997 - Mar 2000: Research Fellow / Research Associate, Institute of Materials Research and Engineering, Singapore.

◊ May 1992 - Sep 1993: Visiting Scholar, Department of Engineering, University of Reading, U.K.

◊ Jun 1987 - May 1992: Lecturer / Assistant Lecturer, Department of Materials Science and Engineering, Hefei University of Technology, China.

ACADEMIC QUALIFICATIONS

◊ Ph.D. in Mechanics of Materials (1993 - 1997), University of Reading, The United Kingdom

◊ M.Eng. in Materials Science & Engineering (1984 - 1987), Hefei University of Technology, China

◊ B.Eng. in Physical Metallurgy (1980 - 1984), China University of Mining and 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 and Long-term Behaviours of Materials: Fracture, fatigue, and creep of bulk, composite, and thin film materials; Experimental and computational mechanics. Materials degradation & failure analysis.

SELECTED PUBLICATIONS (Google Scholar citations > 40,000 with h-index = 106)

1. Y. H. Deng, Z. Chen, et al. "Optimizing Dielectric, Mechanical, and Thermal Properties of Epoxy Resin through Molecular Design for Multifunctional Performance", *Materials Horizons*, 2025, Vol. 12, pp. 1323-1333
2. Z. Q. Li, Z. Chen, J. T. Oh, et al. "Improving the mechanical and magnetic properties of equiatomic FeCo-2V alloy through mild magnetic field annealing", *Metallurgical and Materials Transactions A*, 2024, Vol. 55, pp. 4061-4071
3. G. X. Yan, C. L. Gan, Z. Chen et al. "The study of Ni-Sn transient liquid phase bonded joints under high temperatures", *Materials Characterization*, 2023, Vol. 203, Article 113099
4. Y. Sun, R. S. Rawat, Z. Chen "Mechanically Robust Multifunctional Antifogging Coating on Transparent Plastic Substrates", *Applied Surface Science*, 2022, Vol. 580, 202101864
5. X. F. Cao, J. Hu, Z. Chen, et al. "Preparation of superhydrophobic nanoplate iron oxide surface on a carbon steel for anti-wetting applications", *Materials & Design*, 2021, Vol. 211, Article 110169
6. X. Zhao, Z. Chen, et al. "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, 11815
7. Y. Z. Shen, J. Tao, Z. Chen, et al. "Icephobic materials: fundamentals, performance evaluation, and applications", *Progress in Materials Science*, 2019, Vol. 103, pp. 509-577
8. 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
9. L. Shen, Z. Chen, et al. "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
10. C. Wang, Z. Chen, et al. "Strength Prediction for Bi-axial Braided Composites by A Multi-scale Modelling Approach", *Journal of Materials Science*, 2016, Vol. 51, pp. 6002-6018
11. A. B. Y. Lim, Z. Chen, et al. "Effect of Palladium on the Mechanical Properties of Cu-Al Intermetallic Compounds", *Journal of Alloys and Compounds*, 2015, Vol. 628, pp. 107-112
12. Q. T. Fu, Z. Chen, et al. "Development of sol-gel icephobic coatings: effect of surface roughness and surface energy", *ACS Applied Materials & Interfaces*, 2014, Vol. 6, pp. 20685-20692
13. Q. L. Tay, Z. Chen, et al. "Enhanced Photocatalytic Hydrogen Production with Synergistic Two-Phase Anatase/Brookite TiO_2 Nanostructures", *The Journal of Physical Chemistry C*, 2013, Vol. 117, pp. 14973-14982
14. H. Yan, Z. Chen, et al. "Copper Diffusion Barrier Performance of Amorphous Ta-Ni Thin Films", *Applied Surface Science*, 2012, Vol. 258, pp. 3158-3162
15. P. D. Kanhere, J. W. Zheng, Z. Chen "Site Specific Optical and Photocatalytic Properties of Bi Doped $NaTaO_3$", *The Journal of Physical Chemistry C*, 2011, Vol. 115, pp. 11846-11853
16. Y. X. Tang, Z. Chen, et al. "Ultrafast Synthesis of Layered Titanate Micro-Spherulite Particles by Electrochemical Spark Discharge Spallation", *Chemistry – A European Journal*, 2010, Vol. 16, pp. 7704-7708
17. H. Xu, C. Liu, T. J. White, Z. Chen, et al. "A re-examination of the mechanism of thermosonic copper ball bonding on aluminium metallization pads", *Scripta Materialia*, 2009, Vol. 61, pp. 165-168
18. 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
19. 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, pp. 17-25

20. 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, pp. 216-222
21. Y. C. Ee, Z. Chen, et al. "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
22. 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
23. 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
24. 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
25. Z. Chen, B. Cotterell, W. Wang, E. Guenther, S. J. Chua "A Mechanical Assessment of Flexible Opto-electronic Devices", *Thin Solid Films*, 2001, Vol. 394, pp. 202-206
26. 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
27. 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
28. 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
29. 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

POSTGRADUATE STUDENTS TRAINED TO DATE

- Graduated 40 PhD students and 6 MEng (by research) students at NTU.