WANG Chen

PhD

OSKEFER
Failure & Incident Investigation

PROFILE

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Oskefer Consulting is an engineering company with head office located in Singapore, which provides engineering consultancy services, e.g., failure analysis, forensic engineering investigation related consulting, root cause analysis, risk-based design review, inspection and/or condition assessment, trouble shooting, training, and research services.

Dr Wang Chen co-founded Oskefer Consulting Pte Ltd in **June 2022** and assumed the roles of Adjunct Principal Consultant. Dr Wang has over 12 years of research experience in fracture mechanics, finite-element analysis, composite failure and material characterization.

Dr Wang majored in materials science and computational mechanics, who obtained his M.Eng. in Nanjing University of Aeronautics and Astronautics (China) in 2013 and his joint Ph.D. in Nanyang Technological University (Singapore) and Loughborough University (UK) in 2018. Dr Wang's research focuses on failure modes of composites and numerical failure prediction in multiple length scales.

Dr Wang started his career as a scientist in Singapore Institute of Manufacturing Technology in Agency for Science, Technology and Research. Since 2018, Dr Wang has been involved in several industry projects to solve critical problems hindering industry adoption of additive manufacturing technologies. As a principal investigator, Dr Wang is also equipped with much experience in conducting numerical lightweight design and distortion control for additively manufactured metal and polymer parts.

At Oskefer, Dr Wang primarily focus on numerical modelling, finite elemental analysis and composite failures.

Dr Wang is bilingual in both Chinese and English.

Key Expertise

In-depth and hands-on experience in composite characterization; Broad knowledge on versatile Engineering disciplines; Experienced in failure analysis, numerical modeling and lightweight design.

Industry Experience

Aerospace; Advanced materials; Lightweight products

PROFESSIONAL EXPERIENCE

June 2022 – Present **Oskefer Consulting (Concurrent appointment)** **Director and Adjunct Principal Consultant**

- As Adjunct Principal Consultant, responsible for the cases in structural failure and composites fracture, with special interests in aerospace, manufacturing, marine, vehicles, oil & gas (upstream & downstream), traditional power (gas turbine/steam turbines) and renewable energy (wind turbine powerplant, solar PV, concentrated solar powerplant).
- Providing consultancy services of numerical structural analysis.
- Responsible for business development and strategic growth of the company.

Jan 2021 – Jan 2022	**USJDM Angling PTE LTD (Concurrent appointment)**	**Scientist and Consultant**

- Designed new products made by carbon-fibre composites to save weight while maintain strength.
- Numerically analyzed performance of fishing rods and accessories for product development.
- Solved manufacturing issues of irregular shaped composite and metal parts.
- Inspected and tested composite angling equipment.
- Provided consultancy for long-term research and development plans.

Jan 2018 – Present	**Singapore Institute of Manufacturing Technology (SIMTech)**	***Scientist and Principal Investigator***

- Conducting finite-element analysis (FEA) and topology optimization (TO) of lightweight structures for aerospace, marine and offshore industries.
- Analyzing and designing structural and functional parts for saving weight and manufacturing cost.
- Predicting failure modes and failure positions of industry parts made by varying technologies, e.g., AM, machining, injection molding, extrusion, vacuum forming, etc.
- Developing numerical method for evaluating performance of fibrous composite products.
- Characterizing material performance, coating performance, surface treatment quality, etc.
- Managing and leading industry collaborative projects, work package and research funds as a PI.
- Providing training for industry (course for 3D printing, AM design, etc.).

EDUCATION

Doctor of Philosophy (PhD) in Materials Science & Computational Mechanics
joint with Nanyang Technological University (Singapore) and Loughborough University (UK) *2018*

- **Research area:** Failure analysis of composites, multi-scale modelling of textile carbon-fibre reinforced composites, and protective sport-product design
- **Award:** The MSE Best PhD Thesis Award of 2018, NTU

Master of Engineering (ME) in Materials Science
Nanjing University of Aeronautics and Astronautics, China *2013*

- **Research area:** Metallic and composite materials for engineering applications, advanced characterization methods of composites.
- **Award:** Valedictorian Award of University Convocation 2013, Outstanding research individual 2012, etc.

Bachelor of Engineering (BE) in Materials Science & Engineering
Nanjing University of Aeronautics and Astronautics, China *2010*

PUBLICATIONS / PRESENTATIONS & OTHERS

- Authored and/or co-authored over 17 research papers related to energy and materials
- Presented at over 5 international conferences
- International journal reviewer for 10+ high quality journals
- Judge for Singapore Science & Engineering Fair, 2021 and 2022