

## PROFILE

**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, fire & explosion investigation, risk-based design review, inspection and/or condition assessment, trouble shooting, training, and research services*.

Dr Yong ZHAO founded **OSKEFER Materials Engineering LLP** in Sep 2020 as the sole director. With the rapid business expansion, he joined forces with other three experts to co-found **OSKEFER Consulting Pte Ltd** in April 2022 and assumed the roles of Director & Principal Consultant. **OSKEFER Consulting** was officially under operation on 1 July 2022. Dr Zhao has 19 years of experience in engineering consultancy and research and technology development services.

Dr Zhao started his research and technology development experience as a research student with Harbin Institute Technology, China, and Nanyang Technological University, Singapore, in 2006 and 2008, respectively; then started his career as a failure analysis consultant in 2013, and was later prompted quickly to positions of executive consultant, senior consultant and technical lead with the Failure Analysis Centre of TÜV SÜD, Singapore, until Sep. 2020.

Dr Zhao has been engaged as Expert Witness in multiple high-profile litigation cases related to claim disputes among various parties. Dr Zhao had attended court hearings/trials in Singapore, Malaysia, and United Arab Emirates, and his expert reports, opinions, and testimonies have been followed by the courts.

Dr Zhao is a Singaporean Chinese and bilingual in both Chinese and English.

### KEY STRENGTHS:

- Broad engineering knowledge across disciplines (i.e., materials engineering, electrical engineering, etc.)
- Expert knowledge and hands-on experiences in different materials, i.e., metals, polymers, ceramics, and composites
- Rich experience in forensic engineering investigation, failure analysis, root cause analysis, and fire & explosion investigation
- Expert witness experience in Singapore, Malaysia, and United Arab Emirates

### INDUSTRY EXPERIENCE:

- **Power Generation** (generators, main transformers, protection relays, switch gears, etc.)
- **Manufacturing** (electronics, printed circuit boards, sensors, batteries, etc.)
- **Energy Sector** (temperature sensors, pressure sensors, flow meters, liquid level sensors, etc.)
- **Transportation** (railway power system, power cables, train driving system, marine power generator units, etc.)

## PROFESSIONAL EXPERIENCE

July 2022 – Present      **OSKEFER Consulting Pte Ltd**

*Director,  
Principal Consultant*

- Providing engineering consultancy services to insurance companies, law firms, OEMs, operators, etc.

- As Director, responsible for the continuous development of technical competence of OSKEFER Consulting and expansion of service offerings.
- As Principal Consultant, responsible for the cases in charge, with special interests in railway industry (power system / permanent infrastructure / rolling stock), renewable energy (wind turbine, solar PV, hydro-powerplant), oil & gas & petrochemical (upstream & downstream), marine (engine system, piping system), semi-conductor production plants (piping system, HVAC, electrical distribution panels), and fire & explosion investigation (in relation to complex engineering systems).

**Sep 2020 – July 2022 Oskefer Materials Engineering LLP**

***Director,  
Principal Consultant***

- Providing engineering consultancy services mainly to law firms, OEMs and end-users, etc, and responsible for delivery of the cases secured by the company.
- Responsible for business development and strategic growth of the Company.
- Completed several high-profile projects, e.g., fire investigation on the vehicle accident with several passengers' decease/severely injury, safety-review of the new manufacturing processes following the explosion accident at Tuas, expert witness service in a multiple million insurance claim case related to machinery breakdown and business interruption, etc.

**Apr 2013 – Sep 2020 TÜV SÜD PSB**

***Senior Consultant & Technical Lead (2018-2020)  
Executive Consultant & Technical Lead (2016-2018)  
Executive Consultant (2015-2016)  
Consultant (2013-2015)***

- Provide engineering consulting services mainly to OEMs and end-users.
- As Technical Lead, responsible for the quality of forensic engineering investigation and failure analysis services.
- As principal investigators, handled more than 150 projects covering –
  - different industrial sectors (e.g., Power & Energy, Electronics, Marine, Semiconductor, Railway, Aviation, Oil & Gas, Construction, Amusement, etc.),
  - different materials (metallic, polymeric, ceramic, concrete, and composite materials),
  - different failures/incidents/accidents (e.g., structural collapse, structural distortion, cracking / fracture of certain component, corrosion, wear, fire & explosion, etc.),
  - different failure mechanisms (e.g., fatigue, corrosion fatigue, stress corrosion cracking, hydrogen induced damage, cavitation, erosion, wear, fretting, creep, arcing, etc.),
  - different root causes (e.g., improper design, raw material quality problem, manufacturing defect, operation issue, environmental attack, etc.).
- Expert witness in litigation cases related to engineering failures, incidents/accidents.

**Dec 2012 – Apr 2013 Nanyang Technological University**

***Research Associate***

- As a key member, to develop a finite element analysis modeling of a composite material that consists of aerosol and glass fiber reinforced plastics; and to evaluate thermal insulation performance of aerosol by finite element simulation.

## EDUCATION

### Doctor of Philosophy (PhD) in Materials Science & Engineering

Nanyang Technological University, Singapore 2013

- **Research Area:** Fundamental research on shape memory behaviors of polymers, simulation of shape memory behaviors of polymers by finite element method (FEM), and application of shape memory behaviors of polymers on fabrication of micro-lens array.

### Master of Engineering (ME) & Bachelor of Engineering (BE) in Welding Engineering

Harbin Institute of Technology, China 2008 & 2006

- **Research area:** Joining of metallic materials by different techniques, e.g., arc welding, laser beam welding, electron beam welding, brazing, soldering, diffusion bonding, etc.; and simulation of weld pool behaviors using software of Computational Fluid Dynamics (CFD).

## PROFESSIONAL AFFILIATIONS

- ▶ Certified Fire and Explosion Investigator (**CFEI**) & Certified Fire Investigation Instructor (**CFII**)
- ▶ Chartered Engineer (**CEng**) of the Engineering Council, United Kingdom.
- ▶ Professional Member of the Institute of Materials, Minerals and Mining (**MIMMM**), United Kingdom
- ▶ Professional Member of the National Association of Fire Investigators, International.

## PUBLICATIONS / PRESENTATIONS & OTHER

- ▶ Authored and/or co-authored over 20 research papers related to energy and materials
- ▶ Presented at 3 international conferences
- ▶ Holder of 3 patents

## SELECTED LITIGATION CASES DR ZHAO WAS APPOINTED AS EXPERT WITNESS

No.	Title of Project	Client	Year
1.	Comments on investigation report of corroded bearings	Plaintiff	2018
2.	Failure analysis of delamination issue of glass panels	Defendant	2018 & 2019
3.	Inspection on glass panels at 40 Faber Drive	Plaintiff	2018 & 2019
	Failure analysis on delamination issue of glass panels		
4.	Failure analysis on the broken nylon rope sample	Defendant	2020
5.	Failure analysis on broken shaft	Claimant	2020 & 2021
6.	Forensic investigation on cargo lift accident	Defendant	2020 & 2021
7.	Forensic investigation on cracked pigtail tube samples	Defendant	2022 & 2024
8.	Forensic investigation on a polymer film production line issue	Plaintiff	2024 & 2025
9.	Forensic investigation on failed power cable joints	Defendant	2022 & 2025