XIANBIN LIU

PhD CEng MIMMM

OSKEFER
Failure & Incident Investigation

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

Dr Liu is a co-founder of OSKEFER Consulting and assumed the roles of *Director & Principal Consultant*. Dr Liu has 20 years of experience in failure analysis, forensic engineering investigation, fire investigation, risk-based design review and condition assessment.

ADDRESS
1003 Bukit Merah Central,
#07-38, Singapore 159836

CONTACT
T: +65 9592 0657
E: xianbin.liu@oskefer.com

LINKEDIN
linkedin.com/in/dr-xianbin-liu/

Dr Liu started his academic research and technology development career as a researcher in Beihang University, China and Nanyang Technological University, Singapore in 2005 and 2008, respectively. Following the receipt of his PhD degree, he started his industrial career in 2014 as a failure analysis consultant in TÜV SÜD, followed by as a senior engineer in DNV. Dr Liu has completed more than 200 failure and incident investigation projects in different industrial sectors, which cover various materials, including metallic, polymeric, glass, ceramic, concrete, and composite materials. In 2022, Dr Liu co-founded OSKEFER Consulting to provide engineering consultancy services to insurance and legal professionals, as well as OEMs and operators of critical assets.

Dr Liu is bilingual in both Chinese and English.

KEY STRENGTHS:

- Broad engineering knowledge across disciplines
- Expert knowledge and hands-on experiences in Materials Science, including metals & non-metals
- Rich experiences in failure investigation, root cause analysis and risk assessment
- Experienced in fire & explosion investigation

INDUSTRY EXPERIENCE:

- Marine,& Offshore Structure
- Oil & Gas,
- Battery Energy Storage System,
- Civil Constructure,
- Manufacturing,
- Electrical & Electronics

PROFESSIONAL EXPERIENCE

July 2021 – Present **OSKEFER Consulting** ***Director & Principal Consultant***

- Providing engineering consultancy services to all industrial sectors, e.g., insurance companies, law firms, OEMs, and end-users, etc.
- As Director, responsible for marketing, sales, customer support, quality, and business operations of OSKEFER Consulting.
- As Principal Consultant, responsible for the cases in charge, with special interests in Oil & Gas, Marine, Power Plants & Renewables, Civil Construction & Infrastructure, Consumer Appliances, and Medical Devices, etc.

Feb 2020 – June 2022 **DNV** ***Senior Engineer***

- Providing engineering consultancy services mainly to Oil & Gas, Marine, and Power Plants & Renewables Energy industries, etc.
- Person in charge of polymer related consultancy, including material testing and failure investigation.

- As principal investigator, handled more than 50 material failure analysis projects, including LNG (Liquefied natural gas) pipeline, subsea actuation system, offshore windfarm system, marine engine, and aircraft, etc.

Oct 2014 – Feb 2020 **TŰV SŰD** ***Failure Analysis Consultant***

- Provide engineering consultation and risk assessment service to various industrial sectors, such as Oil & Gas, Marine, Chemical Plant, Power Plants, Civil Construction, Transportation, and Semiconductor & Electronics, etc.
- As principal investigator, handled more than 150 failure and incident investigation projects. These projects cover
  - Various industrial sectors.
  - Different materials (metallic, polymeric, glass, 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.).
- Approved Signatory by Singapore Accreditation Council (SAC) – Singapore Laboratory Accreditation Scheme (SINGLAS) for performing and issuing SAC-SINGLAS reports at TÜV SÜD.
- Certified of successfully completing the courses on TÜV SÜD's workshops for ISO/IEC 17025.

Aug 2012 – Sep 2014 **Nanyang Technological University** ***Research Fellow***

- Research on photoelectric properties of semiconductor nanomaterials.
- Hands on experiences in micro-machining and micro-fabrication of MEMS devices.

EDUCATION

Doctor of Philosophy (PhD) in Mechanical & Aerospace Engineering
Nanyang Technological University, Singapore *2013*
- **Research Area**: Advanced semiconductor nanomaterials & MEMS for photoelectric applications

Master of Engineering (ME) in Materials Science & Engineering
Beijing University of Aeronautics and Astronautics, China *2008*
- **Research area:** Intermetallic materials for engineering application

Bachelor of Engineering (BE) in Metallurgical Materials
Inner Mongolia University of Science and Technology, China *2005*

PROFESSIONAL AFFILIATIONS

- 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 (USA)

PUBLICATIONS / PRESENTATIONS & OTHER

- Authored and co-authored over 10 research papers.
- Presented at 3 international conferences & hold nine patents.

SELECTED INVESTIGATION PROJECTS

S/N	Project	Year
1	Failure analysis of vessel impeller (cavitation)	2015
2	Metallurgical Investigation of GT11 of Kepple Merlimau Cogen Power Station	2016
3	Failure Analysis of Low Temperature Superheat Tube Samples	2016
4	Investigation of fractured General Electrical Steam Turbine of Kapar Energy Ventures	2017
5	Investigation of Damage to a 60 MW Nanjing Turbine & Electric Machinery Company	2017
6	Investigation of Coverband Cracking and Bolt Fracture	2017
7	Metallurgical Investigation of Failed Harbin Steam Turbine L-1 Blade	2018
8	Failure Analysis of Cracked Coupling of Unit 3 HP/IP Turbine Rotor	2018
9	Investigation of Cracked 740 MVA Toshiba Electrical Generator	2018
10	Metallurgical Investigation of Damage to Siemens SGT5-4000F Gas Turbine	2019
11	Metallurgical Investigation of Cracked KT-11501 Steam Turbine Rotor	2019
12	Failure analysis on one fractured Inconel coupling	2020
13	Investigation on wind turbine blade disengagement	2021
14	Failure analysis of leaked S316 pipe	2022
15	Metallurgical Examination of the Damaged Thrust Bearing Collar in a Steam Turbine	2023
16	Damage to Mitsubishi 36 MW Steam Turbine STG10	2023
17	Investigation of Leakage at 21EA-28 Recycle gas heater	2023
18	Failure analysis of broken steam turbine blade	2024
19	Failure Analysis of a Broken Motor Shaft	2024
20	Investigation of Damage to Generator Stator Bars	2024
21	Failure analysis of Gas Turbine RT808 Failure	2024
22	Failure Analysis of the GTF R1 Blade Failures	2024
23	Failure analysis of cracked pump shaft sleeve	2024
24	Failure analysis of corrosion damaged heat exchanger tube (FAC)	2025
25	Failure analysis of corrosion damaged SS316 tubes	2025