

## André Feiferis | Forensic Mechanical and Materials EIT, MSc

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### Professional Summary:



André Feiferis is a mechanical engineering expert with broad experience in complex mechanical systems. André is also a materials engineering expert in with a Master's degree in Materials and Metallurgical Engineering. André offers a unique blend of technical knowledge and practical experience to industry. His experience spans failure analysis of building mechanical systems to large losses in mining, heavy equipment and machinery throughout the Americas.

Drawing on his diverse skill set, André specializes in investigating a wide range of equipment failures and product liability cases serving both insurance and legal professionals. His proficiency in areas such as failure analysis, structural integrity, and multiaxial fatigue, coupled with his language diversity (English, Portuguese and Spanish) enable him to effectively communicate complex concepts to stakeholders from diverse backgrounds and regions.

André possesses extensive experience in the insurance market, having collaborated with insurance companies and reinsurance groups worldwide.

### Expertise:

Mechanical failure analysis  
Materials failure analysis  
Rotating Machinery  
Pumps and Piping

Building mechanical systems  
HVAC and plumbing  
Boilers and heat pumps  
Building control systems

Heavy Industry  
Renewable Energy  
Oil & Gas  
Mining & metallurgical

Machinery & manufacturing  
Solar power

Automotive, heavy vehicles  
Vehicle accident analysis

Agricultural equipment  
Fire/Explosion cause analysis

### Education:

**Master of Science (MSc)**, Materials and Metallurgical Engineering, Pontifical University of Rio de Janeiro, 2019

- Failure analysis and fatigue
- Structural Integrity and Fracture
- Metallurgy, Polymers and Composites
- Thermoelectric Power Plants

**Bachelor of Science (BSc)**, Mechanical Engineering, Pontifical University of Rio de Janeiro, 2015

### Licenses:

Mechanical Engineer in Training (EIT- EGBC) - Canada, 2023

Professional Engineer (CREA-RJ) - Brazil, 2015

### Certifications:

Fire Protection Systems - IAAI-CFI (2024)  
Finite Element Method - Static Analysis - MEF 1 - 30 Hours- CAE Training (2020)  
Black Belt - Lean Six Sigma - CAE Training (2020)  
5S Course - Auditing and Implementation - CAE Training (2020)  
Professional Analysis (Advanced Module) - Excel Doctors (2019)  
Power Query (Advanced Module) - Excel Doctors (2019)

### Professional Experience:

#### **Forensic Mechanical Engineer**

EFI Global, 2024 - current  
Forensic engineer serving the insurance and legal industries.

#### **Forensic Mechanical Engineer**

Critério Experts, 2021 – 2022  
Investigated large industrial claims for the insurance industry. Analysis of causes and losses, preparation of expert reports, assessment of values at risk, depreciation, extension of damages and salvage, and related activities. Provided services to global insurance companies and reinsurance groups.

#### **Mechanical Engineer**

Vale S/A, 2020 - 2021  
Design and integrity engineer for metal structures and heavy machinery. Estimation of costs, dimensioning of loads and mass of assets and inspections of existing structures and machines.

#### **Mechanical Engineer**

Solidum Construction Company, 2018 - 2019  
Construction administration and supervision for commercial buildings and supermarkets. Managed all processes and project processes from building foundation through to the delivery of the project.

### Professional Associations:

Engineers and Geoscientists of British Columbia (EGBC)  
Regional Engineering Council of Rio de Janeiro (CREA-RJ)

### Publications:

Marcos Venicius Pereira, Fathi Darwish, André Feiferis, and Tiago Castro. "Multiaxial fatigue criteria applied to motor crankshaft in thermoelectric power plants." MATEC Web of Conferences 300, 04003 (2019).

FEIFERIS, A.; D'ALMEIDA, J. "Evaluation of Water Absorption Effects on the Mechanical Properties and Sound Propagation Behavior of Polyester Matrix-Sponge Gourd Reinforced Composite." Journal of Composites and Biodegradable Polymers, v. 4, p. 26-31, 2016.

## Project Experience:

### ***Building Systems***

#### **HVAC**

Investigations to determine cause of failures in HVAC systems, chillers, evaporator units and ammonia systems. Evaluation of materials, design, installation, maintenance and application of the machinery.

#### **Equipment**

Equipment damage assessment of all mechanical and electrical equipment in laboratory, computer server rooms, food manufacturing, residential and industrial facilities. Specified restoration procedures.

### ***Heavy Industry***

#### **Pipelines**

Petrochemical pipeline failure investigation including mechanical properties, analyzing design, properties, resistance and failures modes. Products include steel and composite pipelines using polymeric matrix reinforced with glass fibers.

#### **Agriculture**

Investigated losses due to storms in farms resulting in collapsed structures of assets such as silos, tanks, bucket elevators, belt conveyors, containers for grains and machinery. Facilities included many kinds of crops including wheat, corn and others.

#### **Mining Industry**

Extensive experience in the mining industry equipment structural integrity and failure analysis. Developed maintenance plan of all assets and machinery such as silos, chutes, belt conveyors, stacker, stacker recovery and steel structures. Determined cause of failures for major damage for losses throughout the Americas.

### ***Automotive***

Numerous cases of vehicle failures and load tipping involving design, manufacturing, product defect, misuse, fatigue, corrosion, wear and maintenance deficiencies. Vehicles included automotive, trucks and heavy mobile equipment.

### ***Cranes & Lifting Devices***

Investigated failures of bridge cranes and other lifting equipment. Identified failures due to design and misuse and steel cable collapse.

### ***Large Complex Loss***

Several investigations of failure incidents and losses calculations in a range from \$1 MM to \$50 MM. In some cases, due to their high complexity, conducted research studies in collaboration with laboratory teams. Losses included catastrophic equipment failures in factories, energy plants, buildings and production farms.

#### **Fires**

Causal investigations of fires in multiple industries involving damage to equipment, production and personal injury. Losses ranged from \$1 MM to 50 MM. Damage assessment of mechanical and electrical equipment in laboratory, computer server rooms, food manufacturing, residential and industrial facilities. Specified restoration procedures.

**Equipment**

Investigations of catastrophic equipment failures in factories, energy plants and buildings.

**Insurance Carriers:**

Qualified as a forensic engineering expert and participated in projects for the following insurance carriers:

AIG  
Allianz  
AON  
Chubb  
CRT Group  
HUB International  
JALS Engineering Services

Kolding Adjusters  
Liberty International  
Mapfre Brazil, S.A.  
Marsh Brazil  
McLarens  
Munich Re  
MS&S Adjusters

Scout Experts  
Tradsul Technical Inspections  
Tokio Marine  
Sedgwick of Brazil  
Zurich