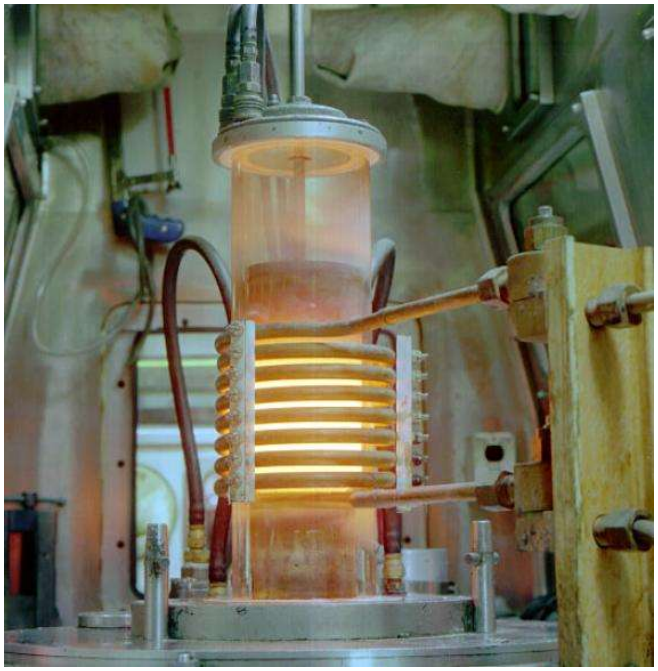
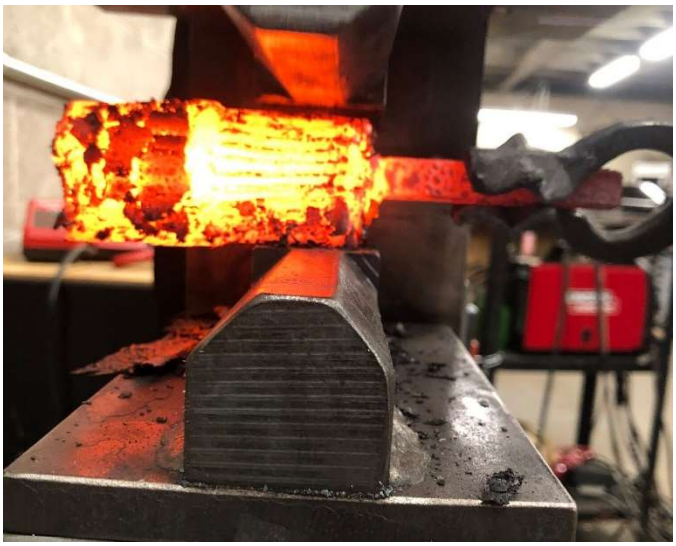
corporate profile

an overview of who we are

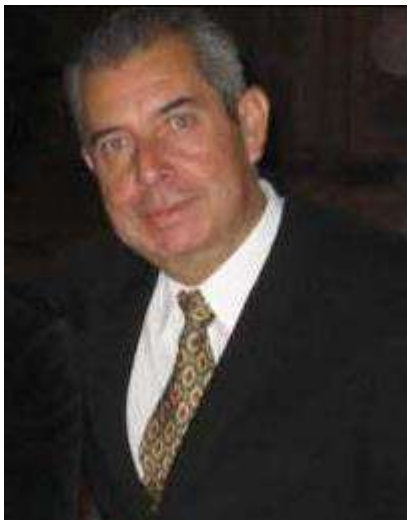




IQM Leopoldo A Rodríguez Reyes.

Cédula Profesional 874064, MÉXICO.

Expertise Description



I am a metallurgy expert witness more than 40 years' experience in the field. I have a focus in Engineering, Metal Processing, Metallurgical Consultation, Plant Design, Optimization and Troubleshooting, Hydrometallurgical Electrometallurgical and Pyrometallurgical applications, Refinery Operations, Product Quality Control, Metal Accounting, Due Diligence and Fatal Flaw Reviews, Scoping and Feasibility Study Contributions. My research team also cover Materials Analysis and Production Problem Solving, Materials Selection, and Forensic Studies, Product Liability, Product Defect and Failure Analysis. Metallurgical failure analysis, Corrosion analysis, Destructive and Non-destructive Testing, Fracture Mechanics and Fatigue Analysis, Material Characterization, Metallographic Examination, Scanning Electron Microscopy, Mechanical Testing. I have provided consultations, courtroom testimony and deposition as a metallurgy expert witness for over two decades duly accepted by Mexican Legal Court.

An expert witness is defined as "someone who is permitted to testify at a trial because of special knowledge or proficiency in a particular field that is relevant to the case." We believe an expert need to do more than just testify. A good expert will educate counsel on all facets of the investigation. The expert's job is to provide an unbiased opinion of the events even when unfavorable to the side that he or she represents, allowing counsel to make the best decision for his/her client.

Please contact us to discuss the details of your case. All discussions are confidential, and we ultimately want you to find the best expert for your case, so if we can't help you, we will provide a referral to someone who can.

The word Metallurgy often invokes images of a blacksmith pounding iron into a horseshoe. Modern Metallurgy encompasses the design, selection and fabrication of metals to perform a specific engineering function. Modern alloys employ elements and processing techniques not available even 50 years ago. The complexity of these different alloys can make selection of the ideal material a daunting task.

Fortunately, our years of experience can quickly narrow your search. We offer a range of services to help you. Whether you are designing a new product or improving an existing product, let us take the guess work out of it!

Sometimes despite your best effort products don't perform as designed. When that happens a root cause failure analysis will not only identify the problem but will allow you to improve your product, so it does not happen again.

OUR SERVICES AND SKILLS.

Extractive Metallurgy and Mineral Processing

Optimize production and maximize economic returns through process solutions tailored to your project's specific requirements. Our metallurgical team is experienced in most aspects of processing base and precious metals, industrial and energy minerals, diamonds, and rare earth elements. Based on their strong operations backgrounds, our specialists have advanced many greenfield projects from metallurgical sample identification to engineering, construction and commissioning. We can also act as technical advisors to mentor and support your operations personnel.

Together with other SRK experts in geology, geochemistry, and mining, we will work closely with you to develop value-adding, cost effective recommendations and deliver a customized process solution that will maximize the economic returns on your project. Given ongoing changes to mineral project disclosure and reporting requirements, our widespread due diligence and review experience can play a vital role in helping you evaluate your project's potential.

METALLURGICAL AND MINERAL PROCESSING ADVISORY

Processing Plant Design, Optimization and Troubleshooting

Geometallurgical Modeling

Development and supervision of bench and pilot plant testing programs

Development of robust and economic processing solutions

Metallurgical plant design

Operational reviews and plant/equipment audits

Technical advice and training

Project review

Processing Plant Flowsheet Design

Hydrometallurgical and Pyrometallurgical Applications

Refinery Operations

Product Quality Control

Metal Accounting

Hydrometallurgical and Chemical Processing of ores

Due Diligence and Fatal Flaw Reviews

Scoping and Feasibility Study Contributions

Metallurgical Engineering

Our staff engineers and researchers are experts in metallurgical analysis. Identifying the root cause of each failure and offering a resolution, are what our customers have come to expect from our professionals. We provide one on one service from the first phone call to the final report. Our technical sales staff will request all background information, photographs and drawings related to your project. We will then develop a cost estimate that fits your project.

Metallurgical engineering is the discipline of engineering that focuses on the relationship between the composition and processing of metals and the resulting effects on performance. The understanding and proper application of metallurgical principles is critical to making metals perform reliably and safely. Our engineers possess a deep knowledge base and breadth of experience in many alloy systems, from basic steels to advanced super alloys. Clients from the telecommunications, aerospace, steel and foundry, transportation, manufacturing, pharmaceutical/medical, building and structures, and utility industries routinely rely on us to provide expert testing and analysis of materials.

Today's increasingly advanced metallurgy opens the door for improved and more reliable technology and products. Our team has the expertise to assist industries in tapping into the unlimited potential for innovation and design with materials science.

Metallurgical Analysis

Metallurgy refers to the process and technology of extracting metals or metal compounds from minerals and using various processing methods to make metals into metal materials with certain properties. Metallurgical analysis reveals the condition and composition of the material through macro, micro and SEM inspection. These analyses reveal the microstructure of the material, the processes performed during the manufacturing process, and whether the material meets the required specifications to ensure durability for the intended use. We can provide a full range of analysis and testing services for metallurgical industry, such as microstructure and macrostructure inspections, corrosion analysis, microhardness testing, etc., and provide fast and reliable results and reports.

Metallurgical Failure Analysis

A small crack invisible to the naked eye can have catastrophic consequences. Our metallurgical experts possess the capabilities to determine whether a given failure was due to the application of extraordinary forces, improper design, improper material selection, presence of an environmental factor, or the result of a material flaw. Fusion Engineering possesses the critical knowledge needed to analyze why and how a metallurgical failure contributed to an accident.

Metallurgical Services

We offer a combination of both destructive testing and non-destructive testing methods for metals and plastics to determine their properties, performance, strength, durability, and resistance to corrosion which can ultimately ensure that the materials are safe, compliant, and fit for the purpose in their intended applications.

As part of our materials testing services, Fusion Engineering provides advanced solutions in metallurgical technology, offering expert support in testing and consultation aligned to all stages of metals processing and product development. Our engineers deliver comprehensive, inter-disciplinary services in the development, processing, characterization and testing of all materials.

Our range of metallurgical services include:

Metallurgical failure analysis

Corrosion analysis

Destructive and non-destructive testing

Fracture mechanics and fatigue analysis

Material characterization

Metallographic examination

Scanning electron microscopy

Mechanical testing

Corrosion Analysis & Consulting

Corrosion costs corporations billions of dollars every year. For industrial processors and property managers, corrosion damage leads to a multitude of decisions concerning safety, replacement costs, lost production costs, maintenance scheduling, and protection systems. Fusion Engineering provides clients with the information necessary to make these decisions effectively and efficiently.

Corrosion Experts

Our highly trained team of corrosion scientists and engineers have investigated corrosion failures in a variety of different industries including petrochemical, paper, medical, residential and commercial construction, and transportation. Our team of metallurgical, chemical and corrosion experts are uniquely qualified to solve a wide range of complex corrosion problems. Working in the consulting, product development, and litigation-support arenas, Fusion Engineering assists clients in a diverse range of industries including pipeline (gas, water, and other), nuclear and fossil-fuel power generation, mining, marine, aeronautical, chemical processing, pulp and paper, construction, utilities (electric, gas, and water), transportation and infrastructure, inorganic and organic coatings (paints), and biomedical.

Corrosion Testing

We have the capabilities to perform corrosion tests to standards from ASTM, NACE, DOT, EPA and many others. With our years of experience on several projects, we can create custom corrosion testing procedures that can match your specific application, conditions, and requirements.

Our corrosion analysis services include but are not limited to:

Consulting and product development

Field inspections and laboratory examinations

Root-cause failure analysis

Corrosion monitoring and remaining life estimation

Accelerated life testing

Corrosion susceptibility assessment

Electrochemical and Corrosion testing

Performance evaluation of paints and coatings

Examples of types of corrosion investigations include:

General or uniform corrosion

Localized corrosion: pitting, crevice, and intergranular

Microbiologically influenced corrosion (MIC)

Stress corrosion cracking (SCC) and corrosion fatigue

Hydrogen embrittlement

Galvanic corrosion

Selective leaching

Erosion-corrosion

High-temperature oxidation, carburization, and sulfidation

Atmospheric corrosion.

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