

# Philippe Corroyez

Materials Science Engineer – Welding engineer



## Profile

59 years old  
Seniority: 6 years  
English



Physico-chemistry of materials – Physical metallurgy – Applied metallurgy

Materials integrity

Fracture mechanics – Material Fatigue

Corrosion

Materials forming processes

Weldability and Welding of Materials

Chairman of the Standardization Commission UNM CNS Conso : “Welding – Consumables”  
Professor at EAPS and ESSA, graduate Schools of specialization in Welding

## Education

### Materials Science Engineer-EUDIL

Polytech Lille

### MAS (Master of Advanced Studies) in Materials Science

Lille

### European and International Welding Engineer – AFS

Paris

### Pressure vessels codes RCC-M and ASME BPVC

### Solidification

## Professional background

### LINCOLN ELECTRIC EUROPE

Key Segment Manager in nuclear, thermal and hydraulic power generation  
TCL International Expert

### AIR LIQUIDE WELDING France

TCL International Expert  
Key Segment Manager in nuclear, thermal and hydraulic power generation  
Project manager for Special Orders – Power Generation  
Product Manager – Technical expert – Consumables & Metallurgy expert

### MANOIR INDUSTRIES

Metallurgist Engineer – Head of welding – Head of the laboratory – Head of R&D metallurgy and welding – Heavy walled thicknesses casting parts for power generation sector – Casting parts for railway industry.

### UNIVERSITE OF LILLE

Researcher at Laboratory of Physical Metallurgy of Lille I: Galvanization – Mechanical alloying from powders and gases.

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## Key areas of expertise

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### Stress cracking, fracture, instability of structures, corrosion

- Fatigue and cracking of hydraulic runners
- Welding cracking on large stainless steel pump casing
- Cracking of welded structures
- Brutal cracking during hydraulic pressure test of HYSS (high yield strength steels)
- Reversible Temper Embrittlement on HYSS welded joints
- Distortion and rupture of cooling cylinders
- Cracking and corrosion of iced water pipes for air conditioning systems
- Reheat cracks in large pressure vessels parts for the petrochemical industry
- Rail derailments – switch instabilities
- Tower Crane falls

### Design and process flaws

- Design and process flaws on railway equipment
- Rail damage by rolling contact fatigue Wheel – Rail
- Design flaws on welded cooling cylinders

### Metallurgy

- Cold cracking phenomena (welded joints and parent materials)
- Hot cracking of welded joints
- Reheat cracking phenomena on CrMoV steels with high thicknesses, for petrochemical applications
- Major chemical Segregations phenomena on high-thicknesses stainless steels castings – subsequent weldability
- Micro cracks on welded joints after post weld heat treatment
- Damages by creep and cracking of advanced 9%Cr creep resistant steels for components of Ultra Super Critical boilers.