

## Dr. Abdelkader MEROUFEL

*Project Leader*

RISE -Materials & production division-

Research Institutes of Sweden

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### Summary

Dr. Abdelkader Meroufel has 21 years of experience in corrosion field addressing various active and corrosion resistant alloys durability challenges in different corrosive environments. He leads corrosion management and mitigation activities within desalination industry (Saudi Arabia) for seven years. His focus was on developing cost-effective solutions to ensure the reliability of power plants, different types of heat exchangers, desalination plant equipments (Pumps, pipes, Tanks,..) for sustainable industry. He continues to provide corrosion expertise consultancies and lead technical and research projects within RISE (Sweden) for different local and global customers from infrastructure and energy sectors. Passionate and resilient, he can build a reputation of fostering innovation starting from a guided curiosity to high-quality outcomes within a positive working environment.

### Education

**PhD** of Material science & solid chemistry, La Rochelle University, France.

**M.Sc.** of Physical & mechanical properties of Materials, option: Corrosion, La Rochelle University, France.

**B. Sci.** of Industrial Chemistry -Material Engineering-, University of USTO (Oran), Algeria.

### Skills

Research projects leading & management, Materials selection, heat exchangers fouling (biofouling and inorganic scaling) control, Materials characterization, Corrosion studies by electrochemical techniques, Corrosion solutions (coatings, inhibitors) evaluation and validation, Cathodic protection.

### Experience

**2021-present:** Project Leader, RISE AB, Sweden

**2020-2021:** Senior Researcher, RISE AB, Sweden.

**2016-2019:** Corrosion Researcher, Saline water conversion corporation, Jubail, Saudi Arabia

**2014-2018:** Head of Corrosion Dpt., Saline water conversion corporation, Jubail, Saudi Arabia

**2012-2014:** Corrosion Specialist, Saline water conversion corporation, Jubail, Saudi Arabia

**2009-2012:** Assistant Professor, Chemical Engineering Department, Jazan University, Saudi Arabia

**2007-2009:** Postdoctoral Fellow, French Petroleum Institute (IFP), France.

**2006-2007:** Assistant Professor, Chemistry Department, La Rochelle University, France.

**2003-2006:** Lecturer, Chemistry Department, La Rochelle University, France.

### Affiliation

- ✓ Nace International member 658595.
- ✓ International Desalination Association (IDA) member 161545.
- ✓ Steering Committee member of Duplex 2018 Conference-Germany-
- ✓ Water distribution infrastructure group leader, Water Europe
- ✓ CEOCORR working group member
- ✓ Reviewer for: Journal of Failure Analysis and Prevention  
Journal of Chemical Engineering and Materials Science  
Journal of Materials Engineering and Performance

- ✓ Advisory Board Member for Corrosion Research Excellence Center-KFUPM University
- ✓ SWCC plants assessment and Rehabilitation Committee.
- ✓ SWCC Water transmission specification Committee.
- ✓ R&D project proposals reviewer for University of Polytechnic Mohamed 6, Morocco.

### Languages

Arabic (native), English (fluent), French (fluent), Swedish (beginner).

### Computing skills

- ✓ Technical Softwares (Matlab, Life365, Zview)

### Accomplished Seminars

- ✓ Cathodic protection in seawater certified level 3 (ISO 15257), Cefracorr, France.
- ✓ Internal Audit ISO 9001/2008, TUV Saudi Arabia.
- ✓ Alloys Used in Refineries and Chemical Plants, Aramco Services Company.
- ✓ Non-Destructive testing applied to concrete structures, ACI Saudi Arabian Chapter.
- ✓ Durability of Concrete Structures, KFUPM & Kansas University.
- ✓ Cathodic protection of Above ground storage tanks, Nace Jubail section.

### Achievements.

#### Publications

##### Patent:

- I.B. Obot, Abdelkader Meroufel, A.A. Sorour, I.B. Onyeachu, S.A. Umoren, A.F. Alenazi, M.M. Solomon. "Corrosion inhibitor composition and methods for inhibiting corrosion". US 11 180 856 B1, (2021).
- Meroufel, Acoustic anti-scaling arrangement for marine vessel and method of controlling the arrangement. Patent application, Swedish Intellectual property office. (2023).

##### Books/chapters:

1. "Corrosion and fouling in Desalination industry", Co-Editor and chapters author, Springer Nature, (2020).
2. "Corrosion Management and control in Desalination -An industrial guide", Co-author with Roger Francis, NACE (2023)

##### Selected scientific Articles.

1° Erwan Diller, Krystel Pelissier, **Abdelkader Meroufel**, Nicolas Larché, Kinetic of cathodic disbondement of pipeline coatings in seawater and soils. Corrosion (2023) -*under publication*-

2° **Abdelkader Meroufel**, Andrew Gordon, Dominique Thierry, Cathodic protection shielding of buried pipeline coatings. Journal of Coatings technology and research (2023). *Under publication*.

3° **Abdelkader Meroufel**, Andrew Gordon, Jonas Engblom, Contribution of microbial activity and oxygen to the initial stage of soil corrosion -laboratory study-, Eurocorr proceeding 2022.

4° **Abdelkader Meroufel**, Clara Linder, Andrew Gordon, Effect of building orientation on corrosion kinetics and mechanism of 3D printed AlSi10Mg alloy in saline medium. Eurocorr proceeding 2022.

5° F Rouabhia, Y Hamlaoui, **Abdelkader Meroufel**, F Pedraza. Corrosion properties of ceria-based coating electrodeposited from alkaline bath on electrogalvanized steel. *J. of Applied Electrochemistry* **51** (2021), 567-580.

6° IB Obot, MM Solomon, IB Onyeachu, SA Umoren, **Abdelkader Meroufel**, A Alenazi, AA Sorour. Development of green corrosion inhibitor for use in acid cleaning of MSF desalination unit. Desalination **496** (2020), 114675.

7° **Abdelkader Meroufel**, Qualification of cold applied tapes: part 1. Materials Performance January (2020)

- 8° Abdelkader Meroufel**, Qualification concerns of cold applied tapes: part 2. *Materials Performance* August (2020)
- 9° I.B Obot, A Meroufel**, IB Onyeachu, A Alenazi, AA Sorour, Corrosion inhibitors for acid cleaning of desalination heat exchangers, progress, challenges and future perspectives. *J. Molecular liquids* **296** (2019), 111760.
- 10° A. Meroufel**, M. Ayashi, Ali Al-Sahari, Abdulrahman Alenazi, “Microbial corrosion of MED condenser tubes made of cupronickel alloy”, *Materials Performance* May (2018).
- 11° A. Meroufel**, M. Ayashi, S. Touzain, Ali Al-Sahari, “Electrochemical study of Microbiological Corrosion of ductile iron in soil simulating solution”, *Materials & Corrosion* **70** (2018), 897-905.
- 12° A. Meroufel**, Nicolas Larché, Saleh Al Fozan, Dominique Thierry, “Crevice corrosion of stainless steels and nickel alloys – effect of crevice geometry, temperature and seawater world location-“ *Desalination and Water Treatment*, (2017), 1-8.
- 13° A. U. Malik, A. Meroufel**, Saleh Al-Fozan, “Boiler tubes failures: a compendium of case studies”, *Journal of Failure analysis and Prevention* **15**, (2015), 246-250.
- 14° Mohammed Al-Hajri, A. U. Malik, A. Meroufel**, Fahd Al-Muaili, ‘Premature failure of dissimilar metal weld joint at intermediate temperature superheater tube’, *Case Studies in Engineering Failure Analysis* **3** (2015), 96-103.
- 15° B. Tribollet, J. Kittel, A. Meroufel**, F. Ropital, F. Grosjean, E. Sutter, ‘Corrosion mechanisms in aqueous solutions containing dissolved H<sub>2</sub>S. Part 2: Model of the cathodic reactions’, *Electrochimica Acta* **124** (2014), 46-51.
- 16° A. U. Malik, Fahd Al-Muaili, Mohammad Al-Ayashi, A. Meroufel**, ‘An investigation on the corrosion of flue gas sensor in boiler stack’, *Case Studies in Engineering Failure Analysis* **1** (2013), 200-208.
- 17° A. Meroufel**, S. Touzain, “Accelerated ageing of powder zinc-rich paints containing different conductive pigments”. *Powder Coating*, **20** (2009), 28-32.
- 18° A. Meroufel**, C. Deslouis, S. Touzain, “Electrochemical and anticorrosive performances of zinc-rich and polyaniline powder coatings”, *Electrochimica Acta* **53**, (2008), 2331-2338.
- 19° A. Meroufel**, S. Touzain, “EIS characterization of new zinc-rich powder coatings”, *Progr. Org. Coat.*, **59** (2007), 197-205.