

Mechanisms of Localized Corrosion Symposium in Memoriam of Prof. José Galvele (March 1937–July 2011)



The year 2016 marked the 40th anniversary of Prof. José Rodolfo Galvele's seminal publication, "Transport Processes and the Mechanism of Pitting of Metals."¹ The NACE Technical Exchange Group (TEG) 407X "Mechanisms of Pitting Corrosion" honored Prof. Galvele's legacy by dedicating the 2016 "Mechanisms of Localized Corrosion Symposium" to the advancements in localized corrosion research over the last four decades. Our goal was to bring together renowned researchers and engineers to discuss the fundamentals of localized corrosion and how those concepts are applied by industry in normative standards, materials selection philosophies, and best practices. The symposium was held at NACE's CORROSION 2016 in Vancouver, Canada and was chaired by myself (Dr. Mariano Iannuzzi; NTNU and GE, Norway) and Dr. Ajit Mishra (Haynes Int., United States).

We were honored by the participation of prolific scholars and industry leaders who presented 27 manuscripts over two full days of passionate and engaging knowledge exchange. The papers included in this special issue comprise nine of the most notable articles, spanning various aspects of the critical acidification model, its application to engineering alloys, as well as the future of modeling and advanced characterization techniques.

Prof. Ricardo Carranza opens the issue with the fascinating story about Prof. Galvele's lifework and his contribution to the advancement of corrosion science and education in Latin America, followed by Dr. Keitelman and Dr. Alvarez's review of the development of the critical acidification model. Dr. Narasi Sridhar presents a thought-provoking paper on localized corrosion modeling, while Dr. Mariano A. Kappes, et al., and Dr. Martín Rodríguez, et al., illustrate how the localized acidification model can be used to predict the pitting and crevice corrosion resistance of stainless steels. Prof. Roy Johnsen, et al., looked at how tungsten additions can greatly improve the localized corrosion resistance of super duplex stainless steels. Dr. Ajit Mishra, et al., reviews materials selection strategies for use in hydrochloric acid service. Finally, Dr. Andrej Nazarov, et al., and Prof. Nick Birbilis, et al., discuss the use of advanced characterization techniques to study different aspects of localized corrosion mechanisms.

I would like to close with a brief anecdote about Prof. Galvele. I met him when I was an undergraduate student in Argentina in 2000. Prof. Galvele was, at the time, the Director of the Instituto Sabato and taught "Materials Degradation I," our first corrosion course as Materials Engineering students. I remember getting lost trying to find his office during the first weeks of the semester. I walked by his door a few times before I found the correct room number. I knocked at the door; Prof. Galvele invited me in. I knew he was there since he told me to come in, but I did not see him at first glance; he was sitting at his desk, hiding behind a pile of journal articles and scientific magazines, concentrating on his readings. I asked him a question about his lecture, and he pointed to an old issue of a journal, lost in a tall shelf packed with books and journals. Prof. Galvele was not only a formidable scientist, but he also remembered by heart when and where hundreds of articles were published. It was his passion for science and education that brought me to the corrosion field. Despite our ever-growing understanding of the localized corrosion phenomenon, Prof. Galvele's legacy will endure for years to come.

We hope you enjoy this special issue as much as we enjoyed organizing and contributing to it. We thank all of the authors, guest lecturers, and *CORROSION* editorial board without whom this issue would not have been possible.

Mariano Iannuzzi,
Adjunct Professor, Corrosion and Surface Protection, Norwegian University of Science and Technology
General Electric, Oil and Gas, Sandvika, Norway

REFERENCES

1. J.R. Galvele, *J. Electrochem. Soc.* 123 (1976): p. 464-474.