

7 REFERENCES

- [1] W. Sun, Dylan, V. Pugh, Stephen, N. Smith, S Ling, L. Jorge., Pacheco, J. Robert, and Franco, "A Parametric Study of Sour Corrosion of Carbon Steel," *Acta Metallurgica*, vol. 44, no. 2, pp. 20, 1996.
- [2] S. N. Smith, and M. Joosten, "Corrosion of carbon steel by H₂S in CO₂ containing oilfield environments," presented at the NACE International, Houston, Texas, 2006.
- [3] H. Asahi, M. Ueno, and T. Yonezawa, "Prediction of sulfide stress cracking in high-strength tubulars," *Corrosion*, vol. 50, no. 7, pp. 537-545, 1994.
- [4] Smith, and N. Stephen, "Current understanding of corrosion mechanisms due to H₂S in oil and gas production environments," presented at the NACE - International Corrosion Conference Series, Houston, Texas, 2015.
- [5] I. H. Omar, Y. M. Gunaltun, J. Kvarekval, and A. Dugstad, "H₂S corrosion of carbon steel under simulated Kashagan field conditions," presented at the NACE international, Houston, Texas, 2005.
- [6] W. Sun, S. Nestic, and S. Papavinasam, "Kinetics of corrosion layer formation, Part 2 – iron sulfide and mixed iron sulfide / carbonate layers," *Corrosion*, vol. 7, no. 64, pp. 586-599, 2008.
- [7] J. Gossett, "Detecting sulfide stress cracking and applying NACE MR0175," *Chemical week*, August 2000, 2018.
- [8] R. Garber, T. Wada, E B. Fletcher, and T. B. Cox, "Sulfide stress cracking resistant steels for heavy section wellhead components.," *Materials For Energy systems*, vol. 7, no. 2, pp. 338 - 350, 1987.
- [9] Wood, M. Heraty, V. Arellano, A. Lisa, V. Wijk, and Lorenzo, Corrosion - related accidents in petroleum refineries, Italy: European commission joint research centre institute for the protection and security of the citizen, 2013.
- [10] Octal Online (2012). Available: <https://www.octalsteel.com/resources/api-5l-grade-b-pipe>. [Accessed 2021].
- [11] Y. P. Asmara, A. Juliawati, A. Sulaiman and Jamiluddin, "Mechanistic model of stress corrosion cracking (scc) of carbon steel in acidic solution with presence of H₂S," presented at the International Conference on Mechanical Engineering Research (ICMER2013), Bukit gambang resort city, Kuantan, Pahang, Malaysia,

2013.

- [12] W. Sun and S. Netic, "A mechanistic model of H₂S corrosion of mild steel," presented at the corrosion 2007 conference & Expo, Athens, Ohio, 2007.
- [13] Y. Zheng, J. Ning, B. Brown and S. Netic, "Electrochemical model of mild steel corrosion in a mixed H₂S/CO₂ aqueous environment," *Corrosion*, no. 3907, pp. 1-20, 2014.
- [14] S. N. Smith, "Predicting corrosion in slightly sour environment," *Materials performance*, 2002
- [15] K. Liao, Q. Yao, X. Wu, and W. Jia , "A numerical corrosion rate prediction method for direct assessment of wet gas gathering pipelines internal corrosion," *Energies*, vol. 5, no. 10, pp. 3892-3907, 2012.
- [16] A. Traidia, E. Chatzidouros, and M. Jouiad, "Review of hydrogen-assisted cracking models for application to service lifetime prediction and challenges in the oil and gas industry," *Corrosion*, vol. 36, no. 4, pp. 323-347, 2018.
- [17] C. Zapffe, and C. Sims, "Hydrogen embrittlement, internal stress and defects in steel.," *Trans AIME 1941*, vol. 1307, pp. 1-37, 1941.
- [18] H.K. Birnbaum, and P. Sofronis, "Hydrogen-enhanced localized plasticity – a mechanism for hydrogen-related fracture," *Material Science and Engineering*, vol. 176, pp. 191-202, 1994.
- [19] R.A. Oriani, " A mechanistic theory of hydrogen embrittlement of steels," *Berichte Der Bunsengesellschaft Für Phys Chem*, vol. 76, pp. 848-857, 1972.
- [20] H. K. Birnbaum and P. Sofronis, "Hydrogen-enhanced localized plasticity--a mechanism for hydrogen- related fracture," *Materials Science and Engineering*, vol. 176, no. 1-2, pp. 191-202, 1994.
- [21] G. Keith , "Electrochemical investigation and modeling of carbon dioxide corrosion of carbon steel in the presence of acetic acid," presented at the NACE International conference, vol. 4379, 2004.
- [22] Rickard, David, A. Griffith, A. Oldroyd, I.B. Butler, E. Lopez-Capel, and D.A.C, Manning. "The composition of nanoparticulate mackinawite, tetragonal iron(II) monosulfide", *Chemical Geology*, Vol. 235, pp 286-298, 2006.
- [23] A.J. Devey, R. Grau-Crespo and N. H. de Leeuw, "Combined density functional

theory and interatomic potential study of the bulk and surface structures and properties of the iron sulfide mackinawite (FeS)," *J Phys. Chem*, vol. 112, pp. 10960-10967, 2008.

- [24] Pearce, Carolyn, Richard, A.D. Patrick and D. J. Vaughan, "Electrical and magnetic properties of sulfides," *Reviews in Mineralogy and Geochemistry*, vol. 61, pp. 127-180, 2006.
- [25] Zhao, J.M, Z. Wei, Y. Zuo and X.H. Zhao, "Effects of some ions on ion-selectivity of ferrous sulfide," *Journal of Applied Electrochemistry*, vol. 35, pp. 267-271, 2005.
- [26] B. Brown, D. Young, and S. Nestic, "Localized Corrosion in an H₂S/CO₂ Environment," in *17th International Corrosion Conference*, 2008.
- [27] B. Brown, and S. Nestic, "Aspects of Localized Corrosion in an H₂S / CO₂ Environment," in *corrosion 2012*, 2012.
- [28] S.M.R. Ziaei , A. H. Kokabi, and M. Nasr-Esfehani, "Sulfide stress corrosion cracking and hydrogen induced cracking of A216-WCC wellhead flow control valve body," *Case Studies in Engineering Failure Analysis*, vol. 1, no. 3, pp. 223-234, 2013.
- [29] M. Liu, C.D.Yang, G.H. Cao, A. M. Russell and Y.H. Liu, "Effect of microstructure and crystallography on sulfide stress cracking in API-5CT-C110 casing steel," *Materials Science and Engineering* , vol. 671, pp. 244-253, 2016.
- [30] A. Turnbull, D.H. Ferriss and H. Anzai, "Modelling of the hydrogen distribution at a crack tip," *Materials Science and Engineering*, vol. 206, no. 1, pp. 1-13, 1996.
- [31] K. N. Akhurst and T. J. Baker, "The threshold stress intensity for hydrogen-induced crack growth," *Physical metallurgy and materials science*, vol. 12 A, no. 6, pp. 1059-1070, 1981.
- [32] H. Huang and W. W. Gerberic, "Quasi-equilibrium modeling of the toughness transition during semibrittle cleavage," *Acta metall*, vol. 42, no. 3, pp. 639-647, 1994.
- [33] S. Serebrinsky, E. Carter, and M. Ortiz, "A quantum-mechanically informed continuum model of hydrogen embrittlement," *Journal of the Mechanics and Physics of Solids*, vol. 52, no. 10, pp. 2403-2430, 2004.

- [34] K. Lee, Laboratory Notebook of Institute for Corrosion and Multiphase technology, ohio: Ohio University, 2005.
- [35] Y. Choi, S. Nestic, and S. Ling, "Effect of H₂S on the CO₂ Corrosion of Carbon Steel in Acidic Solutions," *Electrochim. Acta* 56, vol. 4, pp. 1752-1760, 2011.
- [36] J. Jeon, "Sulfide stress cracking behavior of grade c-110, q-125 and t-95 steel tubulars under high-pressure conditions," *jiwon jeon*, Oklohoma, 2016.
- [37] R. Morana and P.I. Nice, "Corrosion assessment of high strength carbon steel grades P-110, Q-125, 140 and 150 for H₂S containing well environments," presented at the corrosion 2009, nace international, Atlanta, Georgia, 2009.
- [38] J.C. Maria, and T. Perez, "Ibp3507_10 sulfide stress cracking susceptibility of high strength steels used in oil and gas industry: the effect of environmental and microstructural factors," presented at the Rio Oil & Gas Expo and Conference 2010, Rio de Janeiro, 2010.
- [39] M. Zhaoa, M. Liu, A. Atrens, Y. Shan, K. Yang, "Effect of applied stress and microstructure on sulfide stress cracking resistance of pipeline steels subject to hydrogen sulfid," *Materials Science and Engineering* , vol. 478, no. 1-2, pp. 43-47, 2008.
- [40] J. P. Hirth, "Effects of Hydrogen on the Properties of Iron and Steel," *Metallurgical Transactions* , vol. 11, no. 6, pp. 861-890, 1980.
- [41] Q. Aviles, J. Marlene, H. Ladino, Duberney, Falleiros, N. Alonso de melo, and H. Gomes, "A comparative investigation of the corrosion resistance and HiC suceptibility of API 5L X65 and API 5L X80 steels," *Materials Research*, vol. 22, no. 1, pp. 1-13, 2019.
- [42] M. D. Tumuluru, "Sulfide Stress Corrosion Cracking in Low-Alloy Steel Inertia Friction Welds.," *Welding Journal (Miami, Fla)*, vol. 66, no. 3, 1987.
- [43] *Standard test method laboratory testing of metals for resistance to sulfide stress cracking and stress corrosion cracking in H₂S environments*, ANSI/NACE TM0177-2016.
- [44] *Pipeline Transportation Systems for Liquids and Slurries*, ASME B31.4, The american society of mechanical engineers, Washington, 2012.
- [45] "Pipeline Basics & Specifics About Natural Gas Pipelines," pipeline safety trust ,

Bellingham, Washington, USA, 2015.

- [46] StatisticsSolutions online (2016) Available: <http://www.statisticssolutions.com>. [Accessed 2021].
- [47] W. Sun and S Nestic, "Kinetics of Corrosion Layer Formation . Part 2 — Iron Sulfide and Mixed Iron Sulfide / Carbonate Layers in Carbon Dioxide / Hydrogen Sulfide Corrosion," *Corrosion*, July, pp. 586-589, 2008.
- [48] Liu, Jianrong, T. Kalliat, Valsaraj, I. Devai and R.D. Delaune, "Immobilization of aqueous," *Journal of Hazardous Materials* , vol. 157, p. 432–440, 2008.
- [49] Wallaert, Elien, Depover, Tom, Graeve, Iris, Verbeken, and Kim, "FeS corrosion products formation and hydrogen uptake in a sour environment for quenched & tempered steel," *Metals*, vol. 8, no. 1, 2018.
- [50] Specification for Line Pipe, American Petroleum Institute, USA, 2000.