Ferrocene Films on Platinum Electrode Working in Aqueous Media

Jan Vacek^{1,†}, Vlastimil Dorčák¹, Jan Hrbáč², Jiří Janata³

¹Department of Medical Chemistry and Biochemistry, Faculty of Medicine and Dentistry, Palacky University, Hnevotinska 3, 77515 Olomouc, Czech Republic

²Department of Chemistry, Faculty of Science, Masaryk University, 625 00 Brno, Czech Republic ³School of Chemistry and Biochemistry, Georgia Institute of Technology, Atlanta, Georgia 30332-0400, United States † corresponding author's email: jan.vacek@upol.cz

Ferrocene (Fc) is an established redox standard for the measurement of potentials in non-aqueous media. Nevertheless, measurements with free Fc in solution are complicated by adsorption and mass transport phenomena and solvation effects. The water insolubility of Fc renders any analysis of it in aqueous media impossible. To overcome these difficulties, we anchored ferrocene (*via* vinyl moiety) onto a platinum disk electrode surface from its non-aqueous solution. The performance of the resulting Fc-platinum electrode (Fc/Fc⁺ redox transformation) was then explored by cyclic voltammetry in not only non-aqueous but, for the first time, in aqueous media as well.

References

- [1] J. Phys. Chem. Lett. 2025, 16, 2487–2491;
- [2] Chem. Listy 2024, 118, 602–607