

CURRICULUM VITAE

Name : ABD EL-HALIM MOHAMED ABD EL-HALIM

Nationality: Egyptian

Date of Birth: October 13, 1945 (Egypt)

Position : Professor of Electrochemistry Chemistry, Faculty of Science, Ain Shams University, Abbassia, Cairo, Egypt.

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Key words:

Electroplating, Electrodeposition of metal and alloy powders (catalysts), Electrodeposition of metallic coatings containing inert nano particles (Composites), Making use of Constructive Corrosion, Electro-catalysis and Photoelectrochemistry.

Qualifications:

1. Ph.D. in Chemistry. Faculty of Science, Ain Shams University (1972-1975).
Topic of the Thesis: Effect of a.c. on the electrodeposition of iron, nickel and chromium and their alloys.
2. M.Sc. in Chemistry, Faculty of Science, Ain Shams University (1969-1972).
Topic of the Thesis: Effect of a.c. and some addition agents on the behavior of nickel plating baths.
3. B.Sc. in Chemistry, Faculty of Science, Ain Shams University (1962-1966).

Academic Awards:

- The State Prize for the Encouragement in Chemistry, Academy of Scientific Research and Technology, Egypt. 1986.
- The Presidential Medal of Arts and Sciences of the First Class, 1988.
- The Presidential Order of Excellence of the First Class, 1995.

Professional Occupations:

1. 1988 – Present; Professor of Physical Chemistry, Faculty of Science, Ain Shams University, Egypt.
2. 1983 -1988; Assistant Professor of Physical Chemistry, Faculty of Science, Ain Shams University, Egypt.
3. 1975 -1983; Lecturer of Physical Chemistry, Faculty of Science, Ain Shams University, Egypt.
4. 1972 -1975; Assistant Lecturer of Chemistry, Faculty of Science, Ain Shams University, Egypt.
5. 1969 -1972; Demonstrator of Chemistry, Faculty of Science, Ain Shams University, Egypt.

Memberships:

- 1- Fellow of the Alexander von Humboldt Foundation (AvH), Germany.
- 2- Fellow of the German Academic Exchange Service (DAAD), Germany.
- 3- The Egyptian Chemical Society, Cairo – Egypt.
- 4- The Egyptian Corrosion Society, Cairo - Egypt.

Activities Abroad:

1. May 1977 - August 1978; DAAD-grant for participation in the 13th International Seminar, for teaching and research in chemical engineering and physical chemistry, held at Karlsruhe University, West Germany.
2. Sept. 1980 - August 1984; A Secondment for teaching and research at Faculty of Science, King Abdul Aziz University, Jeddah, Kingdom of Saudi Arabia.
3. Dec. 1985 - Feb. 1986; Alexander von Humboldt Fellowship to Braunschweig University, West Germany.
4. Sept. 1995- August 2000; A Secondment for teaching and research at Faculty of Science, UAE University, Al-Ain, United Arab Emirates.
5. Aug. - Sept. 1993, May - Oct. 1994, July 1995, July 1997 and July – Sept. 2003; Alexander von Humboldt Fellowships to carry out research work; Hahn-Meitner Institute, Berlin, Germany.

Scientific Research & Development Interests:

Supervised four Ph.D. and six M.Sc. Thesis in various fields of applied electrochemistry. Research work has been focused on Developing Environmental Friendly nonpolluting baths and problem solving for:

- Electroplating of metals and alloys.
- Electrodeposition of metal and alloy powder (catalysts).
- Electrodeposition of metallic coatings containing inert nano particles (Composites) for certain purposes.
- Electro-less copper plating and anodizing of aluminum.
- Study of Corrosion and Corrosion Control of some metals in sea-water and acidic media.
- Making use of Constructive Corrosion.
- Photoelectrochemistry and Solar Cells to develop Clean Energy Resources.

Publications:

Published 44 scientific papers in international specialized journals and the list of publications is attached behind.

Consultation Activities:

- Consultations in the field of anodizing of aluminium.
- Consultations in the fields of corrosion, corrosion prevention and constructive corrosion.
- Consultations in the fields of electrodeposition of metals and alloys, particularly cadmium, nickel, silver and gold.

Languages:

Arabic: Mother tongue.

English: Excellent.

German: Good.

List of Publications:

1. S.S. Abd El Rehim and A.M. Abd El-Halim, Effect of A.C. on Anodic Polarization of Nickel in Some Plating Baths; Acta. Chim. Acad. Sci, 80 (1974) 65-70.
2. A.M. Azzam, S.S. Abd El Rehim and A.M. Abd El-Halim, Current Distribution Ratio and Metal Distribution Ratio in Nickel Plating Baths; Indian J. of Technology, 15 (1977) 249-252.
3. A.M. Abd El-Halim, K. Juttner and W.J. Lorenz, The Electrocatalytical Influence of Thallium and Lead Underpotential Adsorbates at Silver-Single Crystal Surfaces on the Reduction Processes of Quinone, Persulphate and Protons; J. Electroanal. Chem., 106 (1980) 193-207.
4. S.S. Abd El Rehim, A.M. Abd El-Halim and E.E. Foad, Effect of Some Anions on the Potentiodynamic Behaviour of the Lead Anode in Sulphuric Acid Solutions; Bull. Fac. Sci. K.A.U., Jeddah, 6 (1982) 109-116.
5. A.M. Abd El-Halim, M.I. Sobahi and A.O. Baghlaf, The Role Played by the Anions in Cadmium Electroplating from Some Acidic Baths; Surf. Technol., 18 (1983) 225-232.
6. S.S. Abd El Rehim, A.M. Abd El-Halim and E.E. Foad, Potentiodynamic and Cyclic Voltammetric Behaviour of the Lead Electrode in HCl Solutions; Surf. Technol., 18 (1983) 313-325.
7. A.M. Abd El-Halim and M.I. Sobahi, Effect of Bath Constituents and Some Plating Variables on the Electrodeposition of Cadmium from Acidic Chloride Baths; Surf. Technol., 19 (1983) 45-57.
8. S.S. Abd El Rehim, A.M. Abd El-Halim and E.E. Foad, Potentiodynamic and Cyclic Voltammetric Behaviour of the Lead Electrode in H₂SO₄ Solutions; Surf. Technol., 21 (1984) 161-167.
9. A.M. Abd El-Halim, A.O. Baghlaf and M.I. Sobahi, Effect of Some Addition Agents on the Electrodeposition of Cadmium from Acidic Chloride Baths; Surf. Technol., 22 (1984) 129-142.
10. A.M. Abd El-Halim, A.O. Baghlaf and M.I. Sobahi, Influence of a Superimposed A.C. on Cadmium Electroplating from an Acidic Chloride Bath; Surf. Technol., 22 (1984) 143-153.
11. A.M. Abd El-Halim, Electroplating of Cadmium from Acidic Bromide Baths; J. Appl. Electrochem., 14 (1984) 587-594.
12. S.S. Abd El Rehim, A.M. Abd El-Halim and M.M. Osman, Influence of A.C. on the Electroplating of Co-Ni Alloys from Ammoniacal Bath; Acta Chimica Hungarica, 117 (1984) 393-400.
13. S.S. Abd El Rehim, A.M. Abd El-Halim and M.M. Osman, The Effect of

Superimposing an A.C. on a D.C. on the Electrodeposition of Co-Ni Alloys from a Watts Plating Bath; Surf. Technol., 22 (1984) 337-342.

14. A.M. Abd El-Halim, On the Anomalous Phenomenon of Co-Ni Alloy Electrodeposition; Surf. Technol., 23 (1984) 207-213.
15. A.M. Abd El-Halim and R.M. Khalil, Electrodeposition of Thallium Powder from Sulphate Baths; Surf. Technol., 23 (1984) 215-223.
16. S.S. Abd El Rehim, A.M. Abd El-Halim and M.M. Osman, Electrodeposition of Cobalt-Nickel Alloys from Watts-Type Baths; J. Appl. Electrochem., 15 (1985) 107-112.
17. A.M. Abd El-Halim and R.M. Khalil, Electrodeposition of Catalytically Active Nickel Powder from Sulphate Baths, I: Effect of Bath Constituents; Powder Technol., 43 (1985) 103-112.
18. A.M. Abd El-Halim and R.M. Khalil, Electrodeposition of Catalytically Active Nickel Powder from Sulphate Baths, Effect of Some Operating Variables; Surf. Technol., 26 (1985) 343-351.
19. A.M. Abd El-Halim and R.M. Khalil, Electrodeposition of Catalytically Active Nickel-Thallium Alloy Powders from Sulphate Baths; J. Appl. Electrochem., 15 (1985) 217-223.
20. A.M. Abd El-Halim and R.M. Khalil, Effects of Some Plating Variables on the Electrodeposition of Catalytically Active Nickel-Thallium Alloy Powders; J. Chem. Technol. and Biotechnol., 35 A (1985) 407-414.
21. A.M. Abd El-Halim and R.M. Khalil, Electrodeposition of Catalytically Active Cobalt Powder from Aqueous Sulphate Electrolytes; Bull. Chem. Soc., Japan 58 (1985) 3555-3559.
22. S.S. Abd El Rehim, A.M. Abd El-Halim and M.M. Osman, Electrodeposition of Cobalt-Nickel Alloys from Ammoniacal Single-Complex Baths; J. Chem. Technol. and Biotechnol., 35 A (1985) 415-425.
23. A.M. Abd El-Halim and R.M. Khalil, Some Characteristics of Ni-Co Alloy Powders Electrodeposited from Dilute Sulphate Baths; Surf. and Coatings Technol., 27 (1986) 103-115.
24. S.M. Abd El Wahaab, A.M. Abd El-Halim, S.S. Abd El Rehim and E.A. Abd El-Megiud, Effect of Bath Constituents and Superimposed Sinusoidal A.C. on Nickel Electroplating from Acidic Solutions; Surf. and Coatings Technol., 29 (1986) 313-324.
25. A.M. Abd El-Halim, Apparent Equilibrium Codeposition of Co-Ni Alloy Powder from Dilute Sulphate Baths; Surf. and Coatings Technol., 30 (1987) 183-190.

26. A.M. Abd El-Halim, S.M. Abd El Wahaab, S.S. Abd El Rehim and E.A. Abd El-Megiud, Electroplating of Bright Cadmium from an Optimized Acetate Bath Under the Influence of Superimposed Alternating Current, J. Appl. Electrochem.; 17 (1987) 49-56.
27. A.M. Abd El-Halim, S.S. Abd El Rehim, S.M. Abd El Wahaab and E.A. Abd El-Megiud, Electrodeposition of Cd-Ni Alloys from Acetate Baths Using a Superimposed Alternating Current; J. Appl. Electrochem., 17 (1987) 667-674.
28. A.M. Abd El-Halim and R.M. Khalil, Electrodeposition of Catalytically Active Co-Ni-Ti Alloy from Dilute Sulphate Baths; J. Appl. Electrochem., 17 (1987) 956-964.
29. A.M. Abd El-Halim, M.H. Fawzy and A. Saty, Cyclic Voltammetric Behaviour and Some Surface Characteristics of the Lead Electrode in Aqueous NaCl Solutions; J. Electroanal. Chem., 316 (1991) 275-292.
30. A.M. Abd El-Halim and M.H. Fawzy, Preparation of Pb/PbCl₂ Electrodes by Cyclic Voltammetry for Use in Seawater Activated Batteries; Egyptian Patent 628010(1991).
31. A.M. Abd El-Halim, M.H. Fawzy and A. Saty, Cyclic Voltammetric Behaviour and Some Surface Characteristics of the Lead Electrode in Aqueous NaBr Solutions; J. of Chem. Technol. and Biotechnol., 54 (1992) 237-248.
32. A.M. Abd El-Halim, M.H. Fawzy and A. Saty, Cyclic Voltammetric and Some Surface Characteristics of the Lead Electrode in Aqueous NaI Solutions; Bull. Chem. Soc. Japan, 65 (6) (1992) 1608-1616.
33. A.M. Abd El-Halim, M.H. Fawzy and A Saty, Performance Characteristics of a Pilot Seawater Activated Battery with Pb/PbCl₂ Cathodes Prepared by Cyclic Voltammetry; J. Power Sources, 41 (1993) 55-64.
34. A.M. Abd El-Halim, M.H. Fawzy and M.A. Mahmoud, Influence of Bath Composition and Some Operating Conditions on the Electroplating of Cobalt from Aqueous Sulphate Baths; Trans. Inst. Metal Finish., 71 (2) (1993) 48-51.
35. A.M. Abd El-Halim, M.H. Fawzy and A. Saty, Cyclic Voltammetric Behaviour and Some Surface Characteristics of the Lead Electrode in Aqueous HCl Solutions; J. Chem. Technol. Biotechnol., 58 (1993) 165-175.
36. A.M. Abd El-Halim, M.H. Fawzy and M.A. Mahmoud, Cobalt Electroplating from Aqueous Electrolytes of Different Anionic Species; J. Electrochem. Soc. of Japan (Denki Kagaku), 62 (11) (1993) 1270-1276.
37. A.M. Abd El-Halim, M.H. Fawzy and M.A. Mahmoud, Electrodeposition of Cobalt-Iron Alloys from Aqueous Sulphate Baths; Trans. Inst. Metal Finish., 71 (4) (1993) 125-128.
38. M.H. Fawzy, M.M. Ashour and A.M. Abd El-Halim, Effect of Some Operating Variables on the Characteristics of Electrodeposited Cu- α -Al₂O₃ and Cu-TiO₂

Composites; Trans. Inst. Metal Finish., 73 (4) (1995) 132-138.

39. A.M. Abd El-Halim, N. Alonso-Vante and H. Tributsch, Iron/Sulphur Centre Mediated Photoinduced Charge Transfer at (100) Oriented Pyrite Surfaces; J. Electroanal. Chem., 399 (1995) 29-39.
40. M.H. Fawzy, M.M. Ashour and A.M. Abd El-Halim, Effect of Some Operating Variables on the Characteristics of Electrodeposited Ni- α -Al₂O₃ and Ni-TiO₂ Composites; Trans. Inst. Metal. Finish, 74 (2) (1996) 72-77.
41. M.H. Fawzy, M.M. Ashour and A.M. Abd El-Halim, Effect of Some Operating Variables on the Characteristics of Electrodeposited Cu-Ni Alloys with and without Al₂O₃ and TiO₂ Inert Particles; J. Chem. Tech. Biotechnol., 66 (1996) 121-130.
42. M.H. Fawzy, M.M. Ashour and A.M. Abd El-Halim, Effect of Superimposed A.C. on the Electrodeposition of Ni, Cu and Ni-Cu Alloy Composites with α -Al₂O₃ and TiO₂; Trans. Inst. Metal Finish., 76 (5) (1998) 193-202.
43. A.M. Abd El-Halim, S. Fiechter and H. Tributsch, Control of Interfacial Barriers in n-type FeS₂ (Pyrite) by Electrodepositing Metals (Co, Cu) Forming Isostructural Disulphides; Electrochimica Acta, 47 (2002) 2615-2623.
44. Moehl T., Abd El Halim M., Tributsch H.: Photoelectrochemical studies on the n-MoS₂-Cystein interaction J. Applied Electrochemistry 36 (2006) 1341-1346.