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## **EDUCATION**

B.S. (Chemistry) 1974, University of North Carolina, Chapel Hill.  
Ph.D. (Analytical Chemistry) 1981, University of Cincinnati.

## **PROFESSIONAL EXPERIENCE**

### Academic positions:

8/99-present Visiting Assistant Professor, Georgetown University  
8/96-8/99 Temporary teaching posts at University of Cincinnati, Northern Kentucky  
8/90-11/00 Visiting Scholar, University of Cincinnati  
8/90-5/96 Assistant Professor, College of Mount St. Joseph  
8/89-6/90 Assistant Professor, University of Dayton  
9/85-8/89 Assistant Professor, Wright State University

### Postdoctoral Research Associateships

11/81-5/84 Charles F. Kettering Research Laboratory  
6/81-11/81 University of Cincinnati

### Industrial Positions

7/76-6/77 Merrell-National Laboratories  
7/74-5/75 Velsicol Chemical Corporation

## **RESEARCH INTERESTS**

Electrochemistry of biological compounds at polymer-modified electrodes; development of HPLC detectors based on conducting polymer electrodes; development of stationary phases for environmental and biological separations; biomedical applications of conducting polymers.

## **PROFESSIONAL MEMBERSHIPS AND ACTIVITIES**

### American Chemical Society:

Analytical, Colloid and Surface Science, and Inorganic divisions member. Bioinorganic subdivision member. Co-organizer of symposium "Electrified Polymer/Solution Interfaces" for Spring, 2000 National ACS Meeting

### Dayton Section, American Chemical Society:

Chairman, 1990. Chairman-Elect, 1989. Secretary, 1988. Chairman, Long-Range Planning Committee, 1989. Chairman, National Chemistry Day Committee, 1987. Member, Education and Investment Committees, 1988-1990. Author of grant from national ACS to establish speaker's bureau, 1989.

### Cincinnati Section, American Chemical Society:

Advertising Committee (monthly meeting bulletin), 1991-92, 1993-95. Second Vice-Chair (Chair of Long-Range Planning Committee), 1992-1993. National Chemistry Week volunteer, 1993-1998.

Iota Sigma Pi

Radium Chapter: Vice-President, 1994-1995; President, 1995-1996.

Sigma Xi

Consultant, Ohio High School Science Proficiency Exam, 1998

Microscopy Society of America

Society for Electroanalytical Chemistry

Board of Directors (term: 2005-2010)

Electrochemical Society

Organic and Biological Electrochemistry Subdivision Member

Hospitality Committee, Spring, 2001 National Meeting

International Society of Electrochemistry

Printing/Mailing Chair, FACSS, Cincinnati, Ohio, 1995

Reviewer for

National Science Foundation, ad hoc (1995-present) and panel review (2005)

NIH: Special Study Section, Biomedical Research Infrastructure Networks

(BRIN), June, 2002; Special Study Section SSS 6-10, 2/04-11/04;

Bioanalytical Chemistry, Chemistry and Biophysics SEP - BCMB 10,  
7/05-present

*Journal of Chemical Education, Journal of Solid State Electrochemistry, Applied  
Physics A, Journal of Electroanalytical Chemistry, Langmuir, European  
Polymer Journal, Electrochimica Acta*

## INSTITUTIONAL SERVICE

Wright State University: Academic Mediation Committee Member

College of Mount St. Joseph: Committee on Curriculum and Educational Policy;

Committee on Experiential Learning; Coordinator, mentoring program for high  
assessment plan for North Central accreditation document and member of  
committee which drew up final document); responsible for completing initial  
application for ACS certification of department's BS Chemistry degree.

Georgetown University: Shop Committee (1999-2000), Seminar Committee (1999),

Equipment, Space, and Facilities Committee (2000, 2002-present, Chair 2003-  
present), Analytical Phase I examinations (2000-present), Safety Committee  
(2001-2004), Chemistry Club Liaison (2003-present), Goals and Assessments -  
Other (2003-2004), Goals and Assessment-Undergraduate Curriculum (2005-  
present); Honors and Awards Committee (2005-present)

## RESEARCH PUBLICATIONS

H.B. Mark, R.J. Nowak, W. Kutner, J.F. Johnson\*, A. G. MacDiarmid, "Surface Modification of  
(SN)<sub>x</sub> Electrodes: Surface Interaction of Metal Cations," **Bioelectrochem. Bioenergetics** (1978),  
**5**, 215.

A. Czerwinski, A.N. Voulgaropoulos, H.B. Mark, Jr., J.F. Johnson\*, "Interaction of O<sub>2</sub> with  
polythiazyl, (SN)<sub>x</sub>, electrodes," **Anal. Lett.** (1979), **12A**, 1089.

R. Elder, R. Whittle, K. Glavan, J.F. Johnson\*, E.A. Deutsch, "Trans-dichloro[*o*-  
phenylenebis(dimethylarsine)]-technetium(III), perchlorate and chloride salts," **Acta Cryst. B.**  
(1980) **B36**,1662.

- K. Glavan, R. Whittle, J.F. Johnson<sup>\*</sup>, R. Elder, E.A. Deutsch, "Oxidative Addition from 6-Coordinate to 8-Coordinate Complex. Single Crystal Structures of [Tc(diars)<sub>2</sub>Cl<sub>2</sub>]ClO<sub>4</sub> and [Tc(diars)<sub>2</sub>Cl<sub>4</sub>]PF<sub>6</sub>," **J. Am. Chem. Soc.**(1980) **102**, 2103.
- R.J. Nowak, W. Kutner, J.F. Rubinson, A.N. Voulgaropoulos, H.B. Mark, Jr., A.G. MacDiarmid, "The Polythiazyl, (SN)<sub>x</sub>, Electrode: Surface Modification with Metal Cations," **J. Electrochem Soc.** (1981) **126**,1927.
- J.F. Rubinson, T. Behymer, H.B. Mark, Jr., "Direct Reduction of Acetylene at Mo-Modified Polymeric Sulfur Nitride Electrodes," **J. Amer. Chem. Soc.** (1982) **104**, 1224.
- J.F. Rubinson, T. Behymer, H.B. Mark, Jr., R.J. Nowak, "Polythiazyl Films: Preparation and Use As Electrodes in Aqueous Solutions," **J. Electrochem. Soc.** (1983) **130**, 121.
- B.K. Burgess, J.F. Rubinson, J.L. Corbin, J. Li, "Cyanide and Methylisocyanide: Probes for Nitrogenase Reactivity," **Inorg. Chim. Acta** (1983) **79**, 54.
- J.F. Rubinson, B.K. Burgess, J.L. Corbin, M.J. Dilworth, "Nitrogenase Reactivity: Methylisocyanide as Substrate and Inhibitor," **Biochem.** (1983) **22**, 6260.
- W.E. Newton, B.K. Burgess, S. Cummings, S. Lough, J.W. McDonald, J.F. Rubinson, S.D. Conradson, K.O. Hodgson, in *Advances in Nitrogen Fixation Research*; Veeger, C., Newton, W.E., Eds.;Martinus Nijhoff: The Hague, 1984; p. 60.
- S.D. Conradson, B.K. Burgess, W.E. Newton, K.O. Hodgson, J.W. McDonald, J.F. Rubinson, S.F. Gheller, L.E. Mortensen, M.W.W. Adams, P.K. Mascharak, W.A. Armstrong, R.H. Holm,"Structural Insights from the Mo K-Edge X-ray Absorption Near Edge Structure of the Iron-Molybdenum Protein of Nitrogenase and the Iron-Molybdenum Cofactor by Comparison with Synthetic Fe-Mo-S Clusters," **J. Amer. Chem. Soc.** (1985) **107**, 7935.
- A.F. Diaz, J.F. Rubinson, H.B. Mark, Jr., "Electrochemistry and Electrode Applications of Electroactive/Electro-conductive Polymers," **Adv. Polymer Sci.** (1987) **84**, 113.
- N.F. Atta, A. Galal, A.E. Karagozler, H. Zimmer, H.B. Mark, Jr., Rubinson, J.F., "Voltammetric Studies of the Oxidation of Reduced Nicotinamide Adenine Dinucleotide at a Conducting Polymer-Modified Electrode," **J. C. S. Chem. Comm.**,(1990) **1990**, 1347.
- A. Galal, N.F. Atta, J.F. Rubinson, H. Zimmer, H.B. Mark, Jr., "Electrochemistry and Detection of Some Organic and Biological Molecules at Conducting Polymer Electrodes. II. Effect of Nature of Polymer Electrode and Substrate on Electrochemical Behavior and Detection of Some Neurotransmitters," **Anal. Lett.**, (1992) **26**, 1361.
- Rubinson, J.F., S. Neff, H.B. Mark, Jr., A. Galal, and N.F. Atta, "Characterization and Investigation of Electrocatalytic Properties of Poly-*p*-phenylene-Modified Electrodes," **J. Electroanal. Chem.** (1995) **384**, 19.
- H.B. Mark, Jr., N.F. Atta, Y.L. Ma, K.L. Petticrew, H. Zimmer, Y. Shi, S.K. Lunsford, J.F. Rubinson, A. Galal, "The Electrochemistry of Neurotransmitters at Conducting Organic Polymer

Electrodes: Electrocatalysis and Analytical Applications," **Bioelectrochemistry and Bioenergetics** (1995) **38**, 229.

Z. Wang, H.S. Zhang, H.B. Mark, Jr., and J.F. Rubinson, "Fabrication of a Poly(Methylthiophene-Methylpyrrole) Copolymer Br<sup>-</sup> Sensor and Its Application in Direct Potentiometry and Potentiometric Titration," **Anal. Lett.**, (1997), **30**, 1.

N.F. Atta, G.C. Russell, Z. Wang, N. Akmal, J.F. Rubinson, S.K. Lunsford, A.E. Karagozler, O.Y. Ataman, H. Zimmer, and H.B. Mark, Jr., "Analytical Applications of Organic Conducting Polymer Electrodes," **Turkish Journal of Chemistry** (1997) **21**, 21.

H. Zhang, S.K. Lunsford, I. Marawi, J.F. Rubinson, and H.B. Mark, Jr. "Optimization of Preparation of Poly(3-methylthiophene) Modified Pt Microelectrodes for Detection of Catecholamines," **J. Electroanal. Chem.**, (1997), **424**, 101.

J.F. Rubinson and J. Neyer-Hilvert, "Integration of GC/MS Instrumentation into the Undergraduate Curriculum: Separation and Identification of Fatty Acids in Commercial Fats and Oils," **J. Chem. Educ.** (1997), **74**, 1106.

I. Marawi, A. Khaskelis, A. Galal, J.F. Rubinson, R.P. Popat, F.J. Boerio, and H.B. Mark, Jr., "Metal Ion Incorporation in the Conducting Polymer Matrix Using an "Active" Metal Substrate," **J. Electroanal. Chem.** (1997), **434**, 61.

H. Zhang, A. Galal, J.F. Rubinson, I. Marawi, T.H. Ridgway, S.K. Lunsford, H. Zimmer, and H.B. Mark, Jr., "Flow-Injection Amperometric Detection of Catechol Using Dual-Band Poly(3-Methylthiophene) Electrodes," **Electrochimica Acta** (1998), **43**, 3511.

J.F. Rubinson and H.B. Mark, Jr., "Polythiazyl, (SN)<sub>x</sub>," in J. Mark, ed., Polymer Data Handbook, New York: Oxford Press (1999), 839.

J.F. Rubinson and H.B. Mark, Jr., "Conducting Polymers as Electrodes," in *Interfacial Electrochemistry: Principles and Applications*, Andrezj Wieckowski, ed., New York: Marcel Dekker (1999), p. 689.

H.B. Mark, Jr., H. Zhang, S.K. Lunsford, O. Ceylan, A. Khaskelis, S. Hausner, J.F. Rubinson, G.C. Russell, H. Zimmer, and G.P. Kreishman, "Synergistic Effects in the FIA determination of Catechol in the Presence of Excess Ascorbic Acid by Series Dual Band Amperometric Detection," **Analytica Chimica Acta** (1999) **385**, 281.

T. Gbatu, O. Ceylan, K.L. Sutton, J.F. Rubinson, A. Galal, J.A. Caruso, and H.B. Mark, Jr., "Solid Phase Microextraction of Anions From Aqueous Solutions Using Conducting Polymer Micro-fiber Electrodes," **Analytical Communications** (1999) **36**, 203.

H.B. Mark, Jr., J.F. Rubinson, J. Krotine, W. Vaughn, and M. Goldschmidt, "Catalysis of the Reduction of Acetylene at Poly-3-methylthiophene Electrodes," **Electrochimica Acta** (2000) **25-26**, 4309.

H.B. Mark, Jr., A. Galal, K. Khaskelis, and J.F. Rubinson, "Metal Ion Incorporation in the Conducting Polymer Electrode Matrix: Electrocatalytic Effects," **Annales de Chimie, Science des Matériaux**, (2001), S359-S362.

H.B. Mark, Jr., O. Ceylan, T. Gbatu, A. Galal, J.F. Rubinson, and J.A. Caruso. "Solid Phase Microextraction of Anions of Environmental Interest: Applications of Conducting Polymer Micro-fiber Electrodes for Injection System for HPLC and FIA", in M. A. Butler, P. Vanysek, N. Yamazoe, *Chemical and Biological Sensors and Analytical Methods II*, Pennington, NJ: Electrochemical Society (2001), p. 239.

J.F. Rubinson, "Biology to Engineering: The Present Status of Conducting Polymers," in J.F. Rubinson and H.B. Mark, Jr., *Conducting Polymers and Polymer Electrolytes: From Biology to Photovoltaics*, (ACS symposium series #832), New York: Oxford University Press, 2003.

M. Ovadia, D.H. Zavitz, J.F. Rubinson, D. Park, H.A. Chou, "Investigation of a semiconductor bioelectrode with ohmic behavior *In Vivo*: Impedance spectroscopy of p-type semiconductor electrodes in perfused living heart, **Appl. Phys. Lett.**, in press.

## EDUCATIONAL PUBLICATIONS

K.A. Rubinson, J.F. Rubinson, "A Laboratory Introduction to Quantitative Column Chromatography," **J. Chem. Educ.** (1980) **57**, 909.

J.F. Rubinson and J. Neyer-Hilvert, "Integration of GC/MS Instrumentation into the Undergraduate Curriculum: Separation and Identification of Fatty Acids in Commercial Fats and Oils," **J. Chem. Educ.** (1997), **74**, 1106.

## BOOKS

J. Fortman, D. Karl, J.F. Rubinson, *Experiencing Chemistry: A Laboratory Guide*, WSU Press, 1989.

J.F. Rubinson and K.A. Rubinson, *Contemporary Chemical Analysis*, New York: Prentice-Hall, 1998.

J.F. Rubinson, Students Solutions Manual and Instructor's Manual to accompany *Contemporary Chemical Analysis*, New York: Prentice-Hall, 1998.

K.A. Rubinson and J.F. Rubinson, *Contemporary Instrumental Analysis*, New York: Prentice-Hall, 2000.

J.F. Rubinson, Instructor's Manual to accompany *Contemporary Instrumental Analysis*, New York: Prentice-Hall, 2000.

J.F. Rubinson and H.B. Mark, Jr., ed., *Conducting Polymers and Polymer Electrolytes: From Biology to Photovoltaics*, (ACS Symposium Volume #832), Oxford University Press, 2003