

## Shulamith Schlick

### List of Presentations 1996/2009

1. **S. Schlick**, ESR Imaging of Materials, Seminar at the Department of Chemistry, University of Michigan-Dearborn, 19 January 1996.
2. **S. Schlick**, A Necklace of Atoms, Workshop leader at Exploraton '96, Birmingham, MI, 15 March 1996.
3. **S. Schlick**, Bonding and Transport of Mo(V) in Perfluorinated Ionomers Using ESR and ESR Imaging, at the 29th International Meeting of the ESR Group of the Royal Society of Chemistry, Edinburgh, 24-29 March 1996.
4. **S. Schlick**, Dynamics in Perfluorinated Ionomers, Seminar at the Department of Polymer Chemistry, Faculty of Engineering, Tokyo Institute of Technology, 24 May 1996.
5. **S. Schlick**, Electron Spin Resonance Imaging (ESRI) of Polymeric Systems, at the Meeting of the Society of Polymer Science, Japan, Nagoya, 27-29 May 1996.
6. **S. Schlick**, ESR and NMR Study of Perfluorinated Ionomers as Membranes and Solutions, Seminar at the Department of Chemistry, Faculty of Engineering, Gifu University, Gifu, Japan, 30 May 1996.
7. **S. Schlick**, Dynamics and Transport in Perfluorinated Ionomers by ESR,  $^{19}\text{F}$  NMR and ESR Imaging, Graduate School of Human and Environmental Studies, Kyoto University, Kyoto, Japan, 3 June 1996.
8. **S. Kutsumizu and S. Schlick**, Aggregation of EMAA Ionomers in Aqueous Solutions: ESR Spectra of Amphiphilic Spin Probes, at the National ACS Meeting, Orlando, Florida, 25-30 August 1996.
9. **Z. Gao and S. Schlick**, Translational Diffusion of  $\text{Mo}^{\text{V}}$  in Perfluorinated Ionomers by ESR Imaging (ESRI), at the National ACS Meeting, Orlando, Florida, 25-30 August 1996.
10. **L. Zhou and S. Schlick**, Hydration and Dynamics in Pluronic L64 From ESR Spectra of Amphiphilic Spin Probes, at the National ACS Meeting, Orlando, Florida, 25-30 August 1996.
11. **X. Hu and S. Schlick**,  $\text{Cu}^{2+}$  Complexation in Telechelic Polyisoprene, at the National ACS Meeting, Orlando, Florida, 25-30 August 1996.
12. **S. Schlick**, Electron Spin resonance Imaging (ESRI) of Transport Processes in Polymeric Systems, at the 2nd International Conference of Electron Paramagnetic Resonance, Warsaw, Poland, 9-13 September 1996.
13. **S. Schlick**, Self-Assembling of Ionomers in Solution, from ESR Spectra of Amphiphilic Spin Probes: Comparison of Perfluorinated and Protiated Systems, Technical Center, DuPont-Mitsui Company, Chiba, Japan, 26 November 1996.
14. **S. Schlick**, Study of Ionomers as Membranes and in Solution, Kuraray Company, Kurashiki, Japan, 6 December 1996.
15. **S. Schlick**, Application of ESR Imaging to Polymeric Systems, Kuraray Company, Kurashiki, Japan, 6 December 1996.
16. **S. Schlick**, ESR Imaging of Transport Processes in Polymers, Faculty of Engineering and Design, Kyoto Institute of Technology, Kyoto, 9 December 1996.
17. **S. Schlick**, Self-Assembling of Perfluorinated Ionomers in Water and Nonaqueous Solvents from ESR Spectra of Paramagnetic Transition Metal Cations and  $^{19}\text{F}$  NMR,

- Department of Materials Science and Engineering, Nagoya Institute of Technology, Nagoya, 11 December 1996.
18. **S. Schlick**, Polymer Research in My Group - A Necklace of Atoms, Department of Chemical and Biological Sciences, Faculty of Science, Japan Women's University, Tokyo, 7 January 1997.
  19. **S. Schlick**, Electron Spin Resonance Imaging (ESRI) of Transport Processes in Polymeric Systems: From Mirabelle Plums to Grilled Fish, Institute for Life Support Technology, Yamagata Technopolis Foundation, 23 January 1997.
  20. **S. Schlick**, Study of Ionomer Membranes and Solutions by Magnetic Resonance Methods, Department of Molecular Chemistry, Graduate School of Engineering, Hokkaido University, Sapporo, Japan, 3 February 1997.
  21. **S. Schlick**, Study of Self-Assembling in Amphiphilic Polymers by Magnetic Resonance Methods, Department of Polymer Chemistry, Tokyo Institute of Technology, Tokyo, Japan, February 1997.
  22. **S. Kutsumizu, H. Hara, K. Nakata, and S. Schlick**, ESR Spectra of Spin probes in Aqueous Solutions and Swollen Membranes of Ethylene-Methacrylic Acid Ionomers, at the Spring Meeting of the Chemical Society of Japan, Tokyo, 27-30 March 1997 (presented by S. Kutsumizu).
  23. **S. Schlick**, Self-Assembling of EMAA Ionomers in Aqueous Solutions Based on ESR Spectra of Amphiphilic Probes, Centre d'Etudes Nucléaires de Grenoble, Grenoble, France, 5 April 1997.
  24. **S. Kutsumizu, H. Hara, K. Nakata, S. Yano, and S. Schlick**, Ionic Aggregate Transition of Ethylene Ionomers Swollen by Water, at the Spring Meeting of the Society of Polymer Science of Japan, Tokyo, 24-26 May 1997 (presented by S. Kutsumizu).
  25. **S. Schlick**, Self-Assembling of Ionomers in Aqueous Solutions Based on ESR Spectra of Amphiphilic Probes, at the Gordon Research Conference on Ion-Containing Polymers, Colby-Sawyer College, New London, New Hampshire, 22-29 June 1997.
  26. **E. Szajdzinska-Pietek, M. Wolszczak, A. Plonka and S. Schlick**, Fluorescence Studies of Self-Assembling in Aqueous Solutions of Ethylene-Methacrylic Acid (EMAA) Ionomers, at the Gordon Research Conference on Ion-Containing Polymers, Colby-Sawyer College, New London, New Hampshire, 22-29 June 1997 (presented by E. Szajdzinska-Pietek).
  27. **K. Kruczala, K. Dyrek and S. Schlick**, ESR of Mo(V) Dispersed in Polymer Matrices, at the 20th International EPR Symposium, Denver, Colorado, 3-7 August 1997 (presented by K. Kruczala).
  28. **K. Kruczala and S. Schlick**, 2D Spatial-Spectral ESR Imaging Based on Mo(V), at the 20th International EPR Symposium, Denver, Colorado, 3-7 August 1997 (presented by K. Kruczala).
  29. **E. Szajdzinska-Pietek, M. Wolszczak, A. Plonka and S. Schlick**, Steady-State and Time-Resolved Fluorescence Studies of Pyrene Probes in Aqueous Micellar Solutions of EMAA, at the International Symposium on Pulse Investigations in Physics, Chemistry, and Biology (Puls'97), Szczyrk, Poland, 13-19 September 1997 (presented by M. Wolszczak).
  30. **S. Schlick**, Electron Spin Resonance Imaging (ESRI) of Transport Processes in Polymers, at the 4th International Conference on Magnetic Resonance Microscopy, Albuquerque, New Mexico, 21-25 September 1997.
  31. **S. Schlick**, From Broken Bones to Grilled Fish: Magnetic Resonance Imaging in the World

- and in My Lab, Symposium Highlights Academic Research Excellence (SHARE), UDM, 21 October 1997.
32. **S. Schlick**, Polymer Research in My Group, Graduate Seminar, UDM, 5 November 1997.
  33. **S. Schlick**, Electron Spin Resonance Imaging and Applications to Polymeric Systems, Analytical and Physical Chemistry Seminar, Department of Chemistry, University of Michigan, 20 November 1997.
  34. **S. Schlick**, Electron Spin Resonance Imaging of Diffusion Processes in Polymeric Systems, Institute of Chemical Physics, Russian Academy of Sciences, Moscow, December 1997.
  35. **S. Schlick**, From X-rays to Electron Spin Resonance Imaging, Polish Society of Radiation Research Meeting, Lodz, Poland, December 1997.
  36. **S. Schlick**, Polymer Research in My Group, SUNY at Binghamton Colloquium, 29 January 1998.
  37. **S. Schlick**, Electron Spin Resonance Imaging: From Broken Bones to Grilled Fish, SUNY at Binghamton Colloquium, 30 January 1998.
  38. **S. Schlick and K. Kruczala**, Interaction of Paramagnetic Transition Metal Cations with Ionomers and Polyelectrolytes, Gordon Research Conference on Colloidal, Macromolecular and Polyelectrolyte Solutions, Ventura, California, 8-13 February 1998.
  39. **S. Schlick**, A Necklace of Atoms, Exploraton '98, Seaholm High School, 27 March 1998.
  40. **S. Schlick**, Thermodynamics of Polymer Solutions, Department of Chemistry, University of Florence, Italy, 5 May 1998.
  41. **S. Schlick**, Molecular Weight Averages, and Determination of Polymer Molecular Weight, Department of Chemistry, University of Florence, Italy, 12 May 1998.
  42. **S. Schlick**, NMR and ESR in Polymer Research, Department of Chemistry, University of Florence, Italy, 19 May 1998.
  43. **S. Schlick**, ESR Spectroscopy in Polymer Research: Ionomers, Department of Chemistry, University of Florence, Italy, 26 May 1998.
  44. **S. Schlick**, ESR Imaging of Transport Processes in Polymers, Department of Chemistry, University of Florence, Italy, 27 May 1998.
  45. **S. Schlick**, Multicomponent Sorption and Transport in Elastomers: Polyisoprene Swollen by Benzene and Cyclohexane Mixtures, Group Seminar, 5 June 1998.
  46. **Ewa Szajdzinska-Pietek, Marian Wolszczak, Andrzej Plonka, and Shulamith Schlick**, A Study of Aqueous Solutions of Ionomers by ESR and Fluorescence Probes@, Macro >98, Gold Coast, Australia, 12-17 July 1998 (presented by E. Szajdzinska-Pietek).
  47. **Shoichi Kutsumizu, Krzysztof Kruczala, Ping Zou, and Shulamith Schlick**, Self-Assembling of Ionomers in Aqueous Solutions From ESR Spectra of Amphiphilic Nitroxide Spin Probes and Transition Metal Cations, Macro >98, Gold Coast, Australia, 12-17 July 1998 (presented by S. Schlick).
  48. **Yevgeniy Degtyarev, Krzysztof Kruczala, and Shulamith Schlick**, Electron Spin Resonance Imaging (ESRI) of Diffusion Processes in Polymeric Systems, Macro '98, Gold Coast, Australia, 12-17 July 1998 (presented by S. Schlick).
  49. **Shulamith Schlick, Giuseppe Rossi, Ed Fead, Shingo Matsukawa and Isao Ando**, Multicomponent Sorption and Transport in Elastomers: Polyisoprene Swollen by Benzene and Cyclohexane Mixtures, Macro >98, Gold Coast, Australia, 12-17 July 1998 (presented by S. Schlick).

50. **Krzysztof Kruczala and Shulamith Schlick**, Interaction of Ionomers and Polyelectrolytes with Divalent Metal Cations Studied by ESR Spectroscopy, 216th ACS National Meeting, Boston, MA, 23-27 August 1998 (presented by K. Kruczala).
51. **Shulamith Schlick**, Interaction of Ionomers and Polyelectrolytes with Divalent Cations ( $\text{Cu}^{2+}$  and  $\text{VO}^{2+}$ ): A Study by ESR and Viscosimetry, University of Pau, France, 16 November 1998.
52. **Shulamith Schlick**, From Spectroscopy to Microscopy Using Electron Spin Resonance, Physical Chemistry Seminar at Wayne State University, 2 December 1998.
53. **S. Schlick**, Structure and Dynamics of Ionomer Micelles Reported by ESR and Fluorescence Probes, Institute of Physical Chemistry, Romanian Academy of Science, Bucharest, Romania, 26 May 1999.
54. **S. Schlick**, Electron Spin Resonance Imaging: From Spectroscopy to Microscopy, Institute of Physical Chemistry, Romanian Academy of Science, Bucharest, Romania, 27 May 1999.
55. **S. Schlick**, Electron Spin Resonance Imaging of Degradation Processes in Polymers, G. Asachi Technical Institute, Yassy, Romania, 1 June 1999.
56. **S. Schlick**, Structure and Dynamics of Ionomer Micelles in Aqueous Media Reported by ESR and Fluorescence Probes, Gordon Research Conference on Ion-Containing Polymers, Salve Regina, University, Rhode Island, 20-25 June 1999.
57. **Mikhail N. Motyakin, Nathalie Cornet and Shulamith Schlick**, Microphase Separation in Sulfonated Polyimide (SPI) Ionomers Reported by Paramagnetic Transition Metal Ions and Hydrophilic Nitroxide Spin Probes, Gordon Research Conference on Ion-Containing Polymers, Salve Regina, University, Rhode Island, 20-25 June 1999.
58. **M.V. Motyakin, J.L. Gerlock and S. Schlick**, Electron Spin Resonance Imaging (ESRI) of Degradation and Stabilization Processes: Poly(acrylonitrile-butadiene-styrene) (ABS) Polymers, International Conference on Ageing Studies & Lifetime Extension of Materials, St. Catherine's College Oxford, UK, 12-14 July 1999.
59. **G. Rossi, I. Ando, S. Matsukawa, S. Schlick, Zhan Gao, E. Steiner and E. Fead**, Kinetics of Swelling of Elastomers in Pure and Mixed Solvents, Complex materials Conference, Santa Barbara, California, 22-27 August 1999.
60. **K. Kruczala, M.V. Motyakin and S. Schlick**, UV and Thermal Degradation of Poly(acrylonitrile-butadiene-styrene) (ABS) Polymers Studied by 1D and 2D EPR Imaging, XIth Cracow-Jena Symposium, Cracow, Poland, 5-9 October 1999.
61. **S. Schlick**, 1D and 2D Electron Spin Resonance Imaging of Degradation and Stabilization Processes in ABS Copolymers, Department of Polymer Chemistry, Tokyo Institute of Technology, 25 October 1999.
62. **S. Schlick**, Permanent and Reversible Gels: Transport of Guests and Guest-Host Interactions, Invited Lecture at the 7th International Polymer Conference (IPC 99), Yokohama, Japan, 26-29 October 1999.
63. **S. Schlick**, Spectral Profiling in Polymer Degradation: A Study of ABS Copolymers by Electron Spin Resonance Imaging (ESRI), The Dow Chemical Company, Midland, Michigan, 20 January 2000.
64. **S. Schlick**, Research in My Group: Spectroscopy and Microscopy, Department of Chemistry, University of Detroit Mercy, February 2000.
65. **S. Schlick, K. Kruczala, M.V. Motyakin, and J.L. Gerlock**, Spatial Effects in Polymer Degradation: A Study by 1D and 2D Electron Spin Resonance Imaging (ESRI), ACS

- National Meeting, Washington, D.C., 20-25 August 2000.
66. **M.V.Motyakin and S. Schlick**, 1D and 2D Electron Spin Resonance Imaging (ESRI) of HAS-Derived Nitroxides in ABS Copolymers: Effect of Irradiation Wavelength, ACS National Meeting, Washington, D.C., 20-25 August 2000.
  67. **Shulamith Schlick, Mikhail V. Motyakin, Krzysztof Kruczala**, 1D and 2D Electron Spin Resonance Imaging (ESRI) of Nitroxide Radicals in Stabilized Poly(acrylonitrile-butadiene-styrene): UV vs Thermal Degradation, The 23rd International EPR Symposium, Broomfield, CO, 30 July-3 August 2000.
  68. **S. Schlick, M.V. Motyakin, K. Kruczala, and J.L. Gerlock**, Spectral Profiling in Polymer Degradation by Electron Spin Resonance Imaging (ESRI), 1st International Conference on "Polymer Modification, Degradation, and Stabilisation" (MoDeSt 2000), Palermo, Italy, 3-7 September 2000.
  69. **S. Schlick**, Polymer Research in My Group; Spectroscopic Methods: Fluorescence, Department of Chemistry, University of Bologna, Bologna, Italy, 10 January 2001.
  70. **S. Schlick**, Spectroscopic Methods: Electron Spin Resonance (ESR); Structure and Dynamics of Ionomer Micelles From ESR and Fluorescence Probes, Department of Chemistry, University of Bologna, Bologna, Italy, 11 January 2001.
  71. **S. Schlick**, Spectroscopic Methods: Nuclear Magnetic Resonance (NMR):  $^{19}\text{F}$  NMR of Perfluorinated Ionomers; Multicomponent Sorption and Transport in Polyisoprene Networks by Pulsed Field Gradient Spin Echo NMR and Modeling, Department of Chemistry, University of Bologna, Bologna, Italy, 16 January 2001.
  72. **S. Schlick**, From ESR to ESR Imaging (ESRI): Overview of Imaging Methods, Magnetic Resonance Imaging, ESR Imaging, Department of Chemistry, University of Bologna, Bologna, Italy, 17 January 2001.
  73. **S. Schlick**, Permanent and Reversible Gels: Transport of Guests and Guest-Host Interactions, Spatially-Resolved Polymer Degradation Via 1D and 2D ESR Imaging, Department of Chemistry, University of Bologna, Bologna, Italy, 18 January 2001.
  74. **S. Schlick**, Electron Spin Resonance Imaging of Transport in Gels and Degradation in Polymers, Department of Chemistry Seminar, University of Florence, Florence, Italy, 26 February 2001.
  75. **S. Schlick**, Spatial Effects in Oxidative Degradation of Polymers by 1D and 2D ESR Imaging, Department of Chemistry Seminar, University of Pavia, Pavia, Italy, 21 March 2001.
  76. **S. Schlick**, 1D and 2D Electron Spin Resonance Imaging of Degradation and Stabilization of Polymers: Is It Just a Game?, Ciba Specialty Chemicals, Sasso Marconi, Italy, 22 March 2001.
  77. **S. Schlick**, ESR Imaging Beyond Phantoms: Applications to Diffusion in Gels and Degradation of Polymers, National Center for Research (CNR), Bologna, Italy, 26 March 2001.
  78. **S. Schlick**, ESR Imaging, Invited lecture at the Gordon Research Conference on Ion-Containing Polymers, 15-20 July 2001.
  79. **Ewa Szajdzinska-Pietek and Shulamith Schlick**, Study of Aqueous Nafion Solutions with Paramagnetic and Fluorescent Probes, Gordon Research Conference on Ion-Containing Polymers, 15-20 July 2001.
  80. **Shulamith Schlick and Mikhail V. Motyakin**, Behavior of HAS-derived Nitroxides in

- Thermally Degraded Poly(acrylonitrile-butadiene-styrene) (ABS) Based on ESR Imaging and FTIR, ACS National Meeting, Chicago, IL, 25-30 August 2001.
81. **Shulamith Schlick and Jayesh G. Bokria**, Infrared Profiling of Degradation Products in Poly(acrylonitrile-butadiene-styrene) (ABS) Exposed to UVB Radiation and Oxygen, ACS National Meeting, Chicago, IL, 25-30 August 2001.
  82. **Shulamith Schlick and Biji Varghese**, Morphology of Poly(acrylonitrile-butadiene-styrene) (ABS) and Corresponding Homopolymers and Dicomonomers From Spin Probe ESR and Simulations, ACS National Meeting, Chicago, IL, 25-30 August 2001.
  83. **Ileana Dragutan and Shulamith Schlick**, Magnetic Resonance Characterization of Nafion Using Tailor-made Spin Probes, ACS National Meeting, Chicago, IL, 25-30 August 2001.
  84. **Shulamith Schlick**, 1D and 2D Electron Spin Resonance Imaging of Degradation and Stabilization of Polymers, Pacific Polymer Conference (PPC7), Oaxaca, Mexico, 3-7 December 2001.
  85. **Shulamith Schlick**, Macroscopic Diffusion Coefficients of Guests in Polymer Solutions and Gels by Electron Spin Resonance Imaging, Pacific Polymer Conference (PPC7), Oaxaca, Mexico, 3-7 December 2001.
  86. **Shulamith Schlick**, ESR Imaging: Beyond Phantoms, Magnetic Resonance Seminar, Weizmann Institute of Science, 28 December 2001.
  87. **Shulamith Schlick**, Our research at UDM, Graduate Seminar, 5 February 2002.
  88. **Shulamith Schlick**, Spatially-Resolved Degradation of ABS Polymers Detected by ESR Imaging, Visteon Corporation, 20 February 2002.
  89. **Shulamith Schlick**, Chemistry and Tiramisu: A Sabbatical in Bologna, Italy, SHARE PROGRAM – UDM, 19 March 2002
  90. **Shulamith Schlick**, 1D and 2D ESR Imaging of Polymer Degradation and Stabilization, 35<sup>th</sup> Annual International Meeting, ESR Group of the Royal Society of Chemistry, Aberdeen, Scotland, UK, 7-11 April 2002.
  91. **Shulamith Schlick**, ESR Imaging of Polymer Degradation and Stabilization, 5<sup>th</sup> International **Coatings for Plastics** Meeting, Troy, Michigan, 20-22 May 2002.
  92. **Shulamith Schlick**, Paramagnetic and Fluorescent Probes for the Study of Self-assembling and Dynamics in Ionomers, the ACS Central Regional Meeting (CERM), Ypsilanti, Michigan, 26-29 June 2002.
  93. **S. Schlick and K. Kruczala**, ESR and ESR Imaging of Thermal AGING in Heterophasic Poly(Propylene-co-Ethylene) (HPEC) Containing a Hindered Amine Stabilizer, the ACS Central Regional Meeting (CERM), Ypsilanti, Michigan, 26-29 June 2002. (Presented by K. Kruczala.)
  94. **S. Schlick and J.G. Bokria**, Dynamics and Phase Structure in Poly(acrylonitrile-butadiene-styrene) (ABS) Based on ESR Spectra of Spin Probes, the ACS Central Regional Meeting (CERM), Ypsilanti, Michigan, 26-29 June 2002. (Presented by J.G. Bokria.)
  95. **S. Schlick and B. Varghese**, Morphology and Dynamics of Heterophasic Poly(Propylene-co-Ethylene) (HPPCE) From Electron Spin Resonance (ESR) Spectra of Nitroxide Spin Probes, the ACS Central Regional Meeting (CERM), Ypsilanti, Michigan, 26-29 June 2002. (Presented by B. Varghese.)
  96. **S. Schlick and J.G. Bokria**, ATR-FTIR Investigation of Photodegradation in Poly(Acrylonitrile-Butadiene-Styrene) (ABS), the ACS Central Regional Meeting

- (CERM), Ypsilanti, Michigan, 26-29 June 2002. (Presented by J.G. Bokria.)
97. **S. Schlick, K. Kruczala and M.V. Motyakin**, ESR Imaging of Degradation and Stabilization in Heterophasic Polymers, 2<sup>nd</sup> International Conference on "Polymer Modification, Degradation, and Stabilisation" (MoDeSt 2002), Budapest, Hungary, 29 June-4 July 2002.
  98. **K. Kruczala, B. Varghese, J. Bokria, T. Spalek, and S. Schlick**, Degradation of Heterophasic Propylene-Ethylene Copolymers (HPEC) by ESR, ESR Imaging, FTIR and DSC, 24<sup>th</sup> International EPR Symposium, Denver, CO, 28 July-1 August 2002. (Presented by K. Kruczala.)
  99. **S. Schlick**, Paramagnetic and Fluorescent Probes for the Study of Self-Assembling and Dynamics in Ionomers, Group Meeting, UDM, 25 September 2002.
  100. **S. Schlick**, Spectral and Morphological Profiling of Polymer Degradation via Electron Spin Resonance Imaging (ESRI), NSF Materials Chemistry Workshop, Christiana, Delaware, 17-20 October 2002.
  101. **S. Schlick**, ESR and ESR Imaging of Oxidative Degradation in Multiphase Polymers IUPAC Polymer Conference, Kyoto, Japan, 2-5 December 2002.
  102. **S. Schlick, S. Kutsumizu, and E. Szajdzinska-Pietek**, Self-Assembling and Dynamics in Ion-Containing Polymers Using Paramagnetic and Fluorescent Probes, IUPAC Polymer Conference, Kyoto, Japan, 2-5 December 2002.
  103. **S. Schlick**, Spatial Effects in the Oxidative Degradation in Multiphase Polymers Studied by ESR and ESR Imaging, Seminar Lecture at the Department of Polymer Chemistry, Tokyo Institute of Technology, Tokyo, Japan, 10 December 2002.
  104. **S. Schlick**, From Polymer Micelles to Clean Air: Self-Assembling and Dynamics in Ion-Containing Polymers Using Paramagnetic and Fluorescent Probes, Faculty Research at UDM, 10 April 2003.
  105. **S. Schlick**, ESR Imaging Beyond Phantoms: From Floating Ring to Peeling Paint, Jagiellonian University, Cracow, Poland, 15 May 2003.
  106. **S. Schlick**, ESR Imaging Beyond Phantoms: From Broken Bones to Peeling Paint, Linköping University, Linköping, Sweden, 23 May 2003.
  107. **S. Schlick**, Polymer Degradation: The Case of Membranes Used in Fuel Cells, Gordon Research Conference, Fuel Cells, 27 July-1 August 2003, Roger Williams University, Bristol, RI (Invited lecture).
  108. **A. Bosnjakovic and S. Schlick**, Oxygen Radicals in Nafion Neutralized by  $Ti^{3+}$  and Exposed to  $O_2$  or  $H_2O_2$ , Gordon Research Conference, Fuel Cells, 27 July-1 August 2003, Roger Williams University, Bristol, RI (Presented by A. Bosnjakovic).
  109. **S. Schlick, K. Kruczala, and J.G. Bokria**, ESR Imaging of Degradation in Heterophasic Polymers: The Case of Propylene-Ethylene Copolymers (HPEC), ACS National Meeting, New York City, NY, 7-11 September 2003.
  110. **S. Schlick and K. Kruczala**, Spatial Effects in the Degradation of Polymers by ESR Imaging: Crystalline, Amorphous and Rigid Amorphous phases in Heterophasic Propylene-Ethylene Copolymers, European Colloid and Interface Science Society Meeting, Florence, Italy, 21-26 September 2003.
  111. **S. Schlick, E. Szajdzinska-Pietek, and S. Kutsumizu**, Self-Assembling and Dynamics in Ion-Containing Polymers Based on Paramagnetic and Fluorescent Probes, European Colloid and Interface Science Society Meeting, Florence, Italy, 21-26 September 2003.

112. **S. Schlick**, Study of Polymer Degradation by ESR and ESR Imaging: Membranes in Fuel Cells and Heterophasic Polymers, Seminar at the Atomic Energy Commission (CEA), Grenoble, France, 14 October 2003.
113. **S. Schlick**, Polymer Degradation by ESR and ESR Imaging: Membranes in Fuel Cells, and Heterophasic Polymers, Ford Research Laboratories, Dearborn, Michigan, 10 November 2003.
114. **S. Schlick**, ESR Imaging Beyond Phantoms: Spatially-Resolved Polymer Degradation, Department of Physical Chemistry, University of Stuttgart, Germany, 4 May 2004.
115. **S. Schlick**, From Polymer Micelles to Clean Air Using ESR Spectroscopy, University of Mainz, Germany, 10 May 2004.
116. **S. Schlick**, Spatially Resolved Polymer Degradation via ESR Imaging: Heterophasic Systems, Max-Planck Institute for Polymer Research, Mainz, Germany, 12 May 2004.
117. **S. Schlick**, From Polymer Micelles to Clean Air: Structure, Dynamics, and Stability of Perfluorinated Ionomers, Solvay Solexis, Bollate (Milano), Italy, 17 May 2004.
118. **A. Bosnjakovic, S. Schlick, B. Bennett**, Thermal and Chemical Stability of Polymer Membranes Used in Fuel Cells: Nafion, Studied by ESR, ENDOR, and Spin Trapping, 27th International ESR Symposium, Denver, CO, 1-5 August 2004.
119. **K. Kruczala, T. Spalek, Z. Sojka, S. Schlick**, Deducing 1D Concentration Profiles in ESR Imaging: A New Approach Based on Optimization with the Genetic Algorithm, 27<sup>th</sup> International ESR Symposium, Denver, CO, 1-5 August 2004 (Invited Lecture).
120. **S. Schlick**, ESR Imaging Beyond Phantoms: Spatially-Resolved Degradation of Heterophasic Polymers Stabilized by Hindered Amines, 27th International ESR Symposium, Denver, CO, 1-5 August 2004 (Invited Lecture).
121. **S. Schlick**, Stability of Nafion Membranes Exposed to Heat, Fenton Reagents and UV: From *The Mysterious Island* to Reykjavic (Iceland) and Beyond, GM Fuel Cell Activities, Honeoye Falls, NY, 12 October 2004.
122. **S. Schlick**, Women in the Sciences: A Personal Odyssey, Annual Women Chemists Committee Meeting, Detroit Section, 17 November 2004.
123. **W. Aris, K. Kruczala, and S. Schlick**, Degradation of UV Irradiated Propylene-Ethylene Copolymers Based on ESR, ESR Imaging, UV-Vis and DSC, ACS Student Affiliate Meeting, UDM, 4 March 2005 (Presented by W. Aris).
124. **S. Schlick and M. K. Kadirov**, Radicals Detected by Electron Spin Resonance (ESR) in UV-Irradiated Nafion Membranes: The Effect of Counterions and H<sub>2</sub>O<sub>2</sub>, ACS National Meeting, San Diego, CA, 12-17 March 2005.
125. **S. Schlick and K. Kruczala**, UVA and UVB Irradiation of Heterophasic Propylene-Ethylene Copolymers: Visualizing Stabilization and Early Stages of Degradation Using Electron Spin Resonance Imaging (ESRI), ACS National Meeting, San Diego, CA, 12-17 March 2005.
126. **S. Schlick, A. Bosnjakovic, M. K. Kadirov, and M. Pinteala**, Electron Spin Resonance Methods for Assessing the Stability of Polymer Membranes Used in Fuel Cells, UDM Scholarship Conference, 24 March 2005.
127. **S. Schlick**, Our Research at UDM and in the World, UDM Scholarship Conference, 24 March 2005.
128. **S. Schlick**, ESR Methods for Assessing the Stability of Ionomer Membranes Used in Fuel Cells: From *The Mysterious Island* to Membrane-Derived Radicals, Gordon Research Conference on Ion-Containing Polymers, Il Ciocco, Italy, 1-6 May 2005 (invited lecture).



129. **S. Schlick**, Perfluorinated Ionomers Revisited: ESR Methods for Assessing the Stability of Ionomer Membranes Used in Fuel Cells, University of Florence, Florence, Italy, 9 May 2005 (invited seminar).
130. **M. Danilczuk, A. Lund, S. Schlick**, Density Functional Theory Studies of Fluorine Hyperfine Splitting Constants for the  $-\text{OCF}_2\dot{\text{C}}\text{F}_2$  Radical in UV-irradiated Nafion and Dow Ionomers, Gordon Research Conference on Fuel Cells, Bryant University, RI, 17-22 July 2005.
131. **M.K. Kadirov and S. Schlick**, ESR of Fluorinated Radicals in Proton Exchange Membranes Used in Fuel Cells, Conference on Fundamental Problems in Physics, Kazan, Russia, 27-30 June 2005 (presented in Russian by M.K. Kadirov).
132. **E. Szajdzinska-Pietek, K. Sulak, I. Dragutan, and S. Schlick**, ESR Study of Fluorinated Amphiphilic Systems with the Use of Fluorinated Spin Probes, European Colloid and Interface Society Meeting, Geilo, Norway, 17-23 September 2005 (presented by E. Szajdzinska-Pietek).
133. **W. Aris, K. Kruczala, and S. Schlick**, Degradation of UV-irradiated Propylene-Ethylene Copolymers based on ESR, ESR Imaging, UV-vis, and DSC, ACS Student Affiliate Meeting, UDM, 4 March 2005.
134. **W. Aris and S. Schlick**, Using ESR Spectroscopy to Study Micelle Formation in Amphiphilic PDMS-*b*-PMA Multiblock Copolymers in Aqueous Media, UDM Research Symposium, 8 September 2005.
135. **Y. Miwa and S. Schlick**, Spin-Label Study on Molecular Motion in Polymer-Clay Nanocomposites, UDM Research Symposium, 8 September 2005.
136. **S. Schlick**, Direct ESR and Spin Trapping Methods for Assessing the Stability of Perfluorinated Ionomers Used in Fuel Cells, Ford Research Laboratories, Dearborn, MI, 6 March 2006.
137. **W. Aris, M. Pinteala and S. Schlick**, Using Spin Probe ESR to Study Micelle Formation in Amphiphilic PDMS-*b*-PMA Multiblock Copolymers in Aqueous Media, ACS National Meeting, San Francisco, CA, 10-14 September 2006.
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141. **S. Schlick**, Direct ESR and Spin Trapping Methods for the Detection and Identification of Radical Fragments in Nafion membranes, 3M Membranes, and Model Compounds Exposed to Oxygen Radicals, Ford Research Laboratories, Dearborn, MI, 3 November 2006.
142. **S. Schlick**, ESR and Polymers in the Hydrogen Economy: ESR Methods for the Detection of Radicals in Polymeric Membranes Used in Fuel Cells, Department of Chemistry Seminar, Oakland University, Rochester, Michigan, 29 November 2006.
143. **S. Schlick**, Spin Trapping of Fragmentation in Model Fluorinated Compounds Exposed to  $\bullet\text{OH}$  Radicals and *In Situ* Fuel Cell ESR Experiments, GM Fuel Cell Activities Center, Honeoye Falls, NY, 18 January 2007.

144. **A.J. I. Perkowski, M. Danilczuk, J. E. Stevens, S. Schlick**, ESR Spectra and *Ab initio* DFT Calculations of the DMPO/•OH Adduct, ACS National Meeting, Chicago, IL, 24-29 March 2007.
145. **S. Schlick**, Spatially-Resolved Polymer Degradation Via 1D and 2D ESR Imaging, Department of Chemical Sciences, University of Padova, Italy, 2 May 2007.
146. **S. Schlick**, Using Paramagnetic Spin Labels to Study Dynamics in Polymer-Clay Nanocomposites, GRC on "Chemistry of Supramolecules and Assemblies". Il Ciocco, Italy, 6-11 May 2007.
147. **Tomasz Spalek, Krzysztof Kruczala, Shulamith Schlick, Zbigniew Sojka**, Application of the Genetic Algorithm to 1D EPR Imaging, EMARDIS ESR Conference, Sofia, Bulgaria, 7-14 June, 2007 (presented by K. Kruczala).
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158. **Wenqin Wang, Tsung-Ta Chan, Andrew Perkowski, Shulamith Schlick and Karen Winey**, Composition and Structure Changes of the Ionic Aggregates with Acid Content and

- Neutralization Level in Poly(styrene-co-methacrylic acid) Ionomers, March 2008 Meeting of the American Physical Society (APS), New Orleans, LA, 10-14 March 2008 (presented by Karen Winey).
159. **Shulamith Schlick**, ESR Imaging Beyond Phantoms: From Peeling Paint to Radiation Therapy, Department of Chemical Physics, Weizmann Institute of Science, Rehovot, Israel, 16 May 2008.
  160. **Shulamith Schlick**, ESR Imaging Beyond Phantoms: From Materials to Radiation Therapy, Department of Chemistry, Technion, Israel Institute of Technology, Haifa, Israel, 25 May 2008.
  161. **Shulamith Schlick**, Direct ESR and Spin Trapping Methods for the Study of Fragmentation in Polymer Membranes Used in Fuel Cells, ESR Group, Department of Chemical Physics, Weizmann Institute of Science, Rehovot, Israel, 3 June 2008.
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  163. **Konrad Sulak, Marian Wolszczak, Alba Chittofrati, Ileana Dragutan, Shulamith Schlick, and Ewa Szajdzinska-Pietek**, Spectroscopic Probe Studies on Aggregation of Perfluoropolyether Surfactants in Aqueous Solutions, ECIS 2008, Cracow, Poland 31 August – 5 September 2008 (presented by Ewa Szajdzinska-Pietek).
  164. **Shulamith Schlick**, Towards an Understanding of Membrane Degradation in Fuel Cells, GM Fuel Cell Research Lab, Honeoye Falls, New York, 4 September 2008.
  165. **Krzysztof Kruczala and Shulamith Schlick**, ESR Imaging Method for the Study of Oxidative Polymer Degradation, Workshop on Principles and Applications of Electron Spin Resonance Imaging, EMAR Training Activity Workshop, Prague, Czech Republic, 8-10 October 2008 (presented by Krzysztof Kruczala).
  166. **Shulamith Schlick**, Research in My Lab: From Peeling Paint to Radiation Therapy and Beyond, Graduate Seminar, University of Detroit Mercy, Detroit, 16 October 2008.
  167. **Shulamith Schlick**, Fragmentation of Proton Exchange Membranes Used in Fuel Cells: Direct ESR and Spin Trapping Methods, Commissariat à l'Énergie Atomique (CEA), Grenoble, France, 23 October 2008.
  168. **Shulamith Schlick**, From Peeling Paint to Clean Air: Current Research in My Lab, Instituto Químico de Sarrià (IQS), Barcelona, Spain, 5 December 2008.
  169. **Shulamith Schlick, Marek Danilczuk, and Frank D. Coms**, Visualizing Chemical and Electrochemical Reactions, and Crossover Processes in a Fuel Cell by Spin Trapping ESR Methods, Advances in PEM Fuel Cell Systems, Asilomar, CA, 15-18 February 2009 (presented by S. Schlick).
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