

CURRICULUM VITAE

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Date and place of birth

6 October 1933, Zakopane, Poland

Marital status

married, 1 child

Education

1979, Ph.D. Jagiellonian University, Krakow, Poland (Plant Physiology)
1959, M.Sc. Jagiellonian University, Krakow Poland (Biology)

Career/Employment

Co-Director of EPR center for the Study of Viable Systems, 1996-present
Research Associate Professor of Radiology, Dartmouth Medical School,
1992-present
Visiting Research Associate Professor, College of Medicine, University of
Illinois at Urbana-Champaign, Feb.1990 - Apr.1991
Visiting Research Scientist, College of Medicine, ESR Center, University of
Illinois
at Urbana-Champaign, May 1986 - Jul 1987
Assistant Professor, Department of Plant Physiology, Polish Academy of
Science,
Krakow, 1985-1987

Assistant Professor, Department of Nuclear Spectroscopy, Institute of Nuclear

Physics, Krakow, 1979-1991

Research Assistant, Department of Biophysics, Jagiellonian University, 1965-1968

Research Assistant, Institute of Nuclear Physics, Krakow, 1959-1979

Skills, Knowledge, and Abilities

Considerable knowledge of physical instrumentation and experimental techniques, particularly in the area of nuclear physics, electron paramagnetic resonance and plant photobiology:

Nuclear Physics: Significant experience in the design and construction of electronic equipment for low energy gamma-ray spectroscopy. This includes the construction of ultra fast time-to-amplitude converters, low-noise preamplifiers and coincidence circuits

Electron paramagnetic resonance: Strong experimental and theoretical background in the electron paramagnetic resonance techniques, 14 years of practise in the design, construction and continuous improvement of new generation low frequency EPR spectrometers and resonators dedicated for *in vivo* EPR spectroscopy and oxymetry. This includes the construction of microwave bridges and various types of resonators equipped with automatic matching and tuning circuits to compensate signal distortions caused by movements of experimental animals.

Plant Photobiology: 20 years of scientific collaboration with Jagiellonian University in Kraków, Poland, in the field of Plant Photobiology. Practical experience in the study of the mechanism of action of plant photoreceptors in higher and lower plants, interaction between photoreceptors; biophysical aspects of intracellular movement phenomena; mechanism of the transduction of light stimulus. Design and construction of specialized optoelectronic equipment (multibeam photometers)

Honors and Awards

Ministry of National Education (Poland): 1985, achievements in photobiological research
State Awards (Poland): 1969, development of electronic equipment for nuclear spectroscopy, 1969, achievements in nuclear spectroscopy research; 2001, Silver Medal, International EPR Society

PUBLICATIONS

1. Bozek E., Niewodniczanski H., Ogaza S., Walczak T., Szymczyk S., Yutlandov I.A. : Gamma-vibrational levels in 166 Er, Acta Phys.Pol. **20**, 351 (1961)
2. Bozek E., Hrynkiewicz A., Walczak T., Zapalski G.: Fast-slow coincidence circuit with time to pulse-high converter for a nanosecond range, Nukleonika **7**, 669 (1962)
3. Hrynkiewicz A., Szymczyk S., Walczak T., Zapalski G., Baldeweg F., Stiller G.: Coulomb excitation of 209 Bi nucleus with alpha-particles, Phys. Lett. **6**, 326 (1963)
4. Hrynkiewicz A., Kopta S., Kuznetsev I., Szymczyk S., Walczak T.: Octupole coulomb excitation of 208 Pb nucleus, Nucl. Phys. **79**, 495 (1966)
5. Hrynkiewicz A., Kopta S., Szymczyk S., Walczak T.: Effective resolving time in coincidence measurements on the cyclotron beam, Nucl. Instrum. Methods **49**, 229 (1967).
6. Walczak T., Kisielewski J., Styczen J., Szawlowski M., Hrynkiewicz A.: Awtomatyzowane urządzenie z Ge/Li/ detektorami dla pomiarów korelacji gamma kaskad, Preprint JINR **13**, 4025 (1968)
7. Walczak T., Zapalski G.: Elektroniczna aparatura na krajowych elementach dla fizyki jądrowej niskich energii, Postepy Tech. Jadr. **12**, 415 (1968)
8. Korohoda W., Rakoczy L., Walczak T.: Effect of benzamide upon protoplasmic streaming activity in slime molds plasmodia, Fol.Biol. **17**, 3 (1969)
9. Korohoda W., Rakoczy L., Walczak T.: On the control mechanism of protoplasmic streaming in the plasmodia of Myxomycetes, Acta Protozool. **7**, 363 (1970)
10. Fabczak S., Korohoda W., Walczak T.: Studies on the electrical stimulation at contraction in *Spirostomum*, Cytobiologie **7**, 2 (1973)
11. Walczak T.: Application of two independent light beams for measurements of transmission changes corresponding to chloroplast movements in leaves, Acta Protozool. **18**, 133-136 (1979)
12. Gabrys H., Walczak T.: The effect of temperature and CO₂ concentration on light-induced chloroplast movements in *Tradescantia* leaves, Acta Protozool. **18**, 131-132 (1979)

13. Walczak T., Gabrys H.: New type of photometer for measurement of transmission changes corresponding to chloroplast movements in leaves, *Photosynthetica* **14**, 65-72 (1980)
14. Gabrys H., Walczak T.: Photometric study of chloroplast phototranslocations in leaves of land plants, *Acta Physiol. Plant.* **2**, 281-290 (1980)
15. Walczak T., Gabrys H.: The CO₂ effect on light-induced chloroplast translocations in higher plant leaves, *Zeitschrift fur Pflanzenphysiol.* **101**, 367-375 (1981)
16. Gabrys H., Walczak T., Zurzycki J.: Chloroplast translocations induced by light pulses. I. Effects of single light pulses, *Planta* **152**, 553-556 (1981)
17. Jelesnianska J., Zurzycki J., Walczak T.: The effect of low power ultrasounds on the motility of chloroplasts in *Funaria* leaves, *Acta Physiol. Plant.* **3**, 3-12 (1981)
18. Walczak T., Gabrys H.: Kinetyka procesow sterujacych fototranslokacja chloroplastow, *Zeszyty Naukowe UJ* **689**, 19- 24 (1982)
19. Zurzycki J., Walczak T., Gabrys H., Kajfosz J.: Chloroplast translocations in *Lemna trisulca* L. induced by continuous irradiation and by light pulses. Kinetic analysis, *Planta* **157**, 502-510 (1983)
20. Kajfosz J., Walczak T., Zurzycki J.: Chloroplast translocations in *Lemna trisulca* induced by two successive blue light pulses, *Physiol. Veg.* **21**, 519-525 (1983)
21. Walczak T., Zurzycki J., Gabrys H.: Chloroplast displacement response to blue light pulses. In: *Blue Light Effects in Biological Systems*, H.Senger ed., Springer, Berlin, Heidelberg. 444-453 (1984)
22. Gabrys H., Walczak T., Haupt W.: Blue light induced chloroplast orientation in *Mougeotia*. I. Evidence for a separate sensor pigment besides phytochrome, *Planta* **160** 21- 24 (1984)
23. Walczak T., Gabrys H., Haupt W.: Flavin-mediated weak-light chloroplast movement in *Mougeotia*, In: *Blue Light Effects in Biological Systems*, H.Senger ed., Springer, Berlin, Heidelberg, 454-459 (1984)
24. Gabrys H., Walczak T., Haupt W.: Interaction between phytochrome and the blue light photoreceptor system in *Mougeotia*, *Photochem. Photobiol.* **41**, 731-734 (1985)

25. Scheuerlein R., Walczak T., Gabrys H., Haupt W.: Influence of FR preirradiation on the kinetics of red light induced profile-to-face movement in *Mougeotia*, Acta Physiol.Plant. **9**, 175-188 (1987)
26. Demsar F., Walczak T., Morse P.,Bacic G., Zolnai Z., Swartz H.M.: Detection of diffusion of oxygen by fast scan EPR imaging, J. Magn. Reson. **76**, 224-231 (1988)
27. Gabrys H., Walczak T., Scheuerlein R.: Time characteristics of the interaction between phytochrome and the blue light photoreceptor system in *Mougeotia*, J.Photochem. Photobiol. **2**, 467-474 (1988)
28. Bacic G., Walczak T., Demsar F., Swartz H.M.: Electron spin resonance imaging of tissues with lipid-rich areas, Magnetic Resonance in Medicine **8**, 209-219 (1988)
29. Dobrucki J.W., Walczak T., Swartz H.M.: Nitroxides as probes of metabolism in a model of tumour tissue: an ESR imaging study. Biophys.J. **53**, 199a (1988)
30. Bacic G., Nilges M.J., Magin R.L., Walczak T., Swartz H.M.: *In vivo* localized ESR spectroscopy reflecting metabolism, Magnetic Resonance in Medicine **10**, 266- 272 (1989)
31. Basic G., Nilges M.J., Walczak T., and Swartz H.M.: The use on *in vivo* EPR to follow the pharmacokinetics of drugs, Phys. Med., **5**, 307-313 (1989)
32. Nilges M.J., Walczak T., and Swartz H.M.: 1 GHz *in vivo* ESR spectrometer operating with surface probe, Phys. Med., **5**, 195-201 (1989)
33. Dobrucki J.W., Demsar F., Walczak T., Woods R.K., Bacic G., Swartz H.M.: Electron spin resonance microscopy of an *in vitro* tumour model, Br.J.Cancer **61**, 221-224, (1990).
34. Walczak T., Gabrys H., Appenroth K-J.: Is there a third photoreceptor involved in the control of chloroplast movements in *Mougeotia*? Plant Physiol. **94**, 221-226 (1990)
35. Strzalka K., Walczak T., Sarna T. and Swartz H.M.: Measurement of time-resolved oxygen concentration changes in photosynthetic systems by spin label based ESR oxymetry, Arch. of Biochem. and Biophys, **281**, 312-318 (1990)
36. Iannone A., Magin R. L., Walczak T., Federico M., Swartz H.M., Tomasi A., Vannini V.: Blood clearance of dextran magnetite particles determined by a non-invasive *in vivo* ESR method, Magn. Reson. in Med., **22**, 432-442,(1991)

37. Swartz H.M., Boyer S., Gast P., Glockner J.F., Hu H., Liu K.J., Moussavi M., Norby S.W., Walczak T., Vahidi N., Wu M., Clarkson R.B.: Measurements of pertinent concentrations of oxygen *in vivo*, *Magn. Reson. Med.*, **20**, 333-339, (1991)
38. Swartz H.M., Gast P., Glockner J., Hu H., Ji L.L., Liu K.J., Nilges M., Norby S.W., Vahidi N., Walczak T., Wu M., Clarkson R.B.: The importance of measuring the concentration of oxygen appropriately and how this might be done, in *Oxidative Damage and Repair: Clinical, Biological and Medical Aspects*, Pergamon Press Inc, Oxford, U.K., pp. 415-420, (1991)
39. Swartz H.M., Boyer S., Brown D., Chang K., Gast P., Glockner J.F., Hu H., Liu J.K., Moussavi M., Nilges M., Norby S.W., Smirnov A., Vahidi N., Walczak T., Wu M., Clarkson R.B.: The use of EPR for the measurement of the concentration of oxygen *in vivo* in tissues under physiologically pertinent conditions and concentrations. in *Oxygen Transport to Tissue XIV*, W.Erdmann and D.F.Bruley, (eds.), Plenum Press, New York, pp. 221-228,(1992)
40. Liu K.J., Gast P., Moussavi M., Norby S.W., Vahidi N., Walczak T., Wu M., Swartz H.M.: Lithium Phthalocyanine: a probe for EPR oxymetry in viable biological systems, *PNAS* **90**, 5438-5442 (1993)
41. Swartz H.M., Walczak T.: *In vivo* EPR: prospects for the 90s. *Phys. Med.*, **9**, 41-48 (1993)
42. Smirnov A.I., Norby S.W., Clarkson R.B., Walczak T., Swartz H.M.: Simultaneous multi-site EPR spectroscopy *In vivo*, *Magn. Reson. Med.*, **30**, 213-220 (1993)
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44. Wang W., Belford R.L., Clarkson R.B., Davis P.H., Forrer J., Nilges M.J., Timken M.D., Walczak T., Thurnauer M.C., Norris J.R., Morris A.L., Zhang Y.: Very high EPR - 94 GHz instrument and applications to primary reaction centers from photosynthetic red bacteria and to other disordered systems, *Appl. Magn. Reson.* **6**, 195-215 (1994)
45. Swartz H.M., Liu K.J., Goda F., Walczak T.: India Ink: a potential clinically applicable EPR oximetry Probe, *Magn. Reson. Med.*, **31**, 229-232 (1994)
46. Swartz H.M., Bacic G., Friedman B., Goda F., Grinberg O.Y., Hoopes P.J., Jiang J.J., Liu K.J., Nakashima T., O'Hara J., Walczak T.: Measurement of pO_2 *in vivo*, including

human subjects by electron paramagnetic resonance. *Adv. Exp. Med. Biol.* **361**, 119-128 (1995)

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48. Jiang J.J., Liu K.J., Walczak T., Swartz H.M.: An analysis of the effects of eddy currents on L-band EPR spectra, *J. Magn. Reson.*, **106**, 220-226 (1995).

49. F. Goda, K. J. Liu, T. Walczak, J. A. O'Hara, J. Jiang, and H. M. Swartz, "*In Vivo* EPR Oximetry Using EPR and India Ink," *Magn. Reson. Med.*, **33**:237-245 (1995).

50. Liu K.J., Jiang J., Shi X., Gabrys H., Walczak T., Swartz H.M.: Low frequency EPR study of chromium (V) formation from chromium (VI) in living plants. *BBRes.Com.* **206**, 829-834 (1995)

51. H. M. Swartz, G. Bacic, B. Gallez, F. Goda, P. James, J. Jiang, K. J. Liu, K. Maeder, T. Nakashima, J. O'Hara, T. Shima, and T. Walczak, "*In Vivo* EPR Spectroscopy," in *Bioradicals Detected by ESR Spectroscopy*, Birkhauser Verlag, publishers, H. Ohya-Nishiguchi & L. Packers (Eds.), Birkhauser Verlag Basel/Switzerland, 285-299 (1995).

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53. Gabrys H., Walczak T., Malec P.: Interaction between phytochrome and the blue light photoreceptor system in *Mougeotia*. Low temperature study. *J. Photochem. Photobiol.* **38**, 35-39 (1997)

54. H.M. Swartz, J. Dunn, O. Grinberg, J. O'Hara, T. Walczak, "What Does EPR Oximetry with Solid Particles Measure--And How Does This Relate to Other Measures of pO₂?", *Adv. Exp. Med. Biol.* **428**, 663-670 (1997).

55. H. Hirata, T. Walczak, and H.M. Swartz, "An Improved Inductive Coupler for Suppressing a the Shift in Resonance Frequency of Electron Paramagnetic Resonance Resonators ," *Rev. Sci. Inst.*, **68**, 3187-3191 (1997).

56. Gallez, R. Debuyst, F. Dejehet, K.J. Liu, T. Walczak, H.M. Swartz, F. Goda, R. Demeure, and H. Taper, "Small Particles of Fusinite and Carbohydrate Chars Coated with Aqueous Soluble Polymers: Preparation and Applications for *In Vivo* EPR Oximetry," *Magn. Reson. Med.* **40**, 152-159 (1998).

57. H.M. Swartz and T. Walczak, "Developing *In Vivo* EPR Oximetry for Clinical Use," *Adv. Exp. Med. Biol.* **454**, 243-252 (1998).
58. H.M. Swartz, K.J. Liu, T. Walczak, T. Panz, M. Kobayashi, and W. Zavadoski,, "Effects of Coatings on the Reactivity of Inorganic Sunscreen Agents to Light," *J. Cosmet. Sci.*, **49**, 125-135 (1998).
59. H.M. Swartz and T. Walczak, "Initial Clinical EPR Studies: Potential Problems and their Solutions," Proceedings of ESR (EPR) Imaging and In Vivo ESR Spectroscopy, (H. Kamada, H. Ohya, eds.), Yamagata, Japan, pp 189-192 (1998).
60. Appenroth K-J., Bishoff M., Gabrys H., Stoeckel J., Swartz H.M., Walczak T. and Winnefeld K.: Kinetics of chromium (V) formation and reduction in fronds of the duckweed *Spirodela polyrhiza* - a low-frequency EPR study. *J. Inorganic Biochem.* **78**, 235-242 (2000)
61. M. Miyake, K.J. Liu, T. Walczak, and H.M. Swartz, "In Vivo EPR Dosimetry of Accidental Exposures to Radiation: Experimental Results Indicating the Feasibility of Practical Use in Human Subjects," *Appl. Rad. & Isotopes* **52**, 1031-1038 (2000).
62. H. Hirata, T. Walczak and H.M. Swartz, "Electronically Tunable Surface-Coil-Type Resonator for L-Band EPR Spectroscopy," *J Magn Reson* **142**, 159-167 (2000).
63. H. Hirata, T. Walczak and H.M. Swartz, "Characteristics of an Electronically Tunable Surface-Coil-Type Resonator for L-Band EPR Spectroscopy," *RSI* **72**, 2839-2841 (2001).

CONFERENCE PRESENTATIONS

1. Walczak T., Zurzycki J., Gabrys H.: Chloroplast displacement response to blue light pulses, II International Conference "The Blue Light Syndrome". Marburg, 1983, pp.132-133
2. Walczak T., Gabrys H., Haupt W.: Flavin mediated weak light chloroplast movement in *Mougeotia*, *ibid.* 134-135
3. Gabrys H., Haupt W., Walczak T.: Blue light/red light interaction in *Mougeotia*, European Symposium "Photomorphogenesis in Plants" Frostavallen, 1983, p.25
4. Gabrys H., Walczak T.: Profile-to-face chloroplast movement in *Mougeotia* induced by short wavelength light pulses: evidence for the existence of two independent photoreceptor systems, European Symposium "Photomorphogenesis in Plants" Wageningen, 1985, p.36

5. Walczak T., Gabrys H., Haupt W.: Face-to-profile chloroplast movement in *Mougeotia* induced by successive short blue and red irradiations. Interaction of two photoreceptor systems? *ibid.* p.134
6. Demsar F., Bacic G., Walczak T., Morse P., Swartz H.M.: Contrast enhancement in EPR imaging: studies of distribution and diffusion of oxygen by fast scan imaging, Sixth Annual Meeting, Society of Magnetic Resonance in Medicine, New York, 1987
7. Bacic G., Demsar F., Walczak T., Dobrucki J., Swartz H.M.: ESR imaging of oxygen dependent processes in viable biological systems, Rocky Mountain Conference, Denver, Colorado, 1987
8. Walczak T., Demsar F., Gabrys H., Swartz H.M.: Seed germination: EPR imaging study, *ibid.*
9. Nilges M.J., Walczak T., Demsar F.: In vivo spectroscopy of low frequencies, *ibid.* No 150
10. Scheuerlein R., Walczak T., Gabrys H., Haupt W.: Chloroplast orientation to red light in *Mougeotia*: far-red preirradiation affects the kinetics of movement, XIV International Botanical Congress, Berlin (West), 1987, p.14
11. Dobrucki J.W., Walczak T., Swartz H.M.: Nitroxides as probes for cellular metabolism - an ESR imaging study, Biophysical Conference, Phoenix, Arizona, 1988
12. Walczak T., Gabrys H., Swartz H.M.: Blue light photoreception in higher plants studied with ESR spectrometry III Congress of the European Society for Photobiology, Budapest, 1989, p.90
13. Nilges M.J., Walczak T., Swartz H.M.: 1 GHz *in vivo* spectrophotometer operating with a surface probe, International Conference on *In vivo* Spectroscopy and ESR Imaging, L'Aquila, 1989
14. W. Wang, M. J. Nilges, S. Enochs, P. Gast, R. B. Clarkson, T. Walczak, H. M. Swartz, T. Sarna, and R. L. Belford: W-band EPR of various synthetic melanins: Identification and differentiation, Rocky Mountain Conference on Analytical Chemistry, Denver, Colorado (July 29-August 3, 1990).
15. H.M. Swartz, F. Goda, K.J. Liu, and T. Walczak: Clinical (In Vivo) EPR: The Time Has Come?!?!, 41st Radiation Research Society (1991).
16. H.M. Swartz, S. Boyer, D. Brown, P. Gast, J. Glockner, H. Hu, J. Liu, M. Moussavi, S. Norby, A. Smirnov, N. Vahidi, T. Walczak, M. Wu, and R. Clarkson: Progress in *In*

vivo EPR Spectroscopy to Measure the Concentration of Oxygen [O₂], 33rd Rocky Mountain Conference on Analytical Chemistry, Denver, Colorado (July 28-August 2, 1991).

17. A.I. Smirnov, T. Walczak, J. Liu, S. W. Norby, D. Brown, and H. M. Swartz: Low Level Oximetry by EPR In Vivo : Optimization of Spectroscopic Conditions for Narrow Lines Studies, 33rd Rocky Mountain Conference on Analytical Chemistry, Denver, Colorado (July 28-August 2, 1991).

18. H.M. Swartz, S. Boyer, P. Gast, J.F. Glocker, H. Hu, K.J. Liu, M. Moussavi, S.W. Norby, A. Smirnov, N. Vahidi, T. Walczak, M. Wu, and R.B. Clarkson: Measurements of the Concentration of Oxygen In Vivo in Tissues under Physiologically Pertinent Conditions and Concentrations, Tenth Annual Scientific Meeting of the Society of Magnetic Resonance in Medicine, San Francisco, California (August 10-16, 1991).

19. F. Goda, K.J. Liu, T. Walczak, and H.M. Swartz: New Clinically Applicable Probe for *in vivo* EPR Oximetry as an India Ink, Twelfth Annual Scientific Meeting of the Society of Magnetic Resonance in Medicine, New York, New York (August 14-20, 1993).

20. B. Friedman, J. Eaton, T. Walczak, E. Ruuge, O. Grinberg, and H.M. Swartz.: EPR oximetry in the Langendorff perfused Heart, Workshop on EPR of Viable Biological Systems, Hanover, New Hampshire (October 1993).

21. H.M. Swartz, G. Bacic, J. Dunn, B. Friedman, B. Gallez, F. Goda, O. Grinberg, J. Hoopes, P. James, J. Jiang, J. Liu, K. Mader, T. Nakashima, J. O'Hara, E. Rolett, T. Shima, T. Walczak: In Vivo EPR Spectroscopy: A Technique with Rapidly Expanding Applications for Fundamental and Applied Biomedical Research, International society of magnetic resonance (ISMAR), Sydney, Australia (July 16-20, 1995)

22. H. M. Swartz, J. F. Dunn, B. J. Friedman, F. Goda, O. Y. Grinberg, P. J. Hoopes, P. E. James, K.J. Liu, E. L. Rolett, T. Walczak: pO₂ In Vivo As Measured by EPR: Principles of the Method and Update on Results, International society on oxygen transport to tissue, Pittsburgh, PA. (August 23-27, 1995)

23. J. Jiang, T. Walczak, Ke Jian Liu, H.M. Swartz; Presenter: T. Walczak: "Surface Probe for Low Frequency EPR Based on a Dielectric Resonator." International Workshop on *In Vivo* ESR and ESR Imaging and IV Girse National Congress, L'Aquila, Italy. (September 10-14, 1995)

24. T. Walczak, H.M. Swartz; Presenter: T. Walczak: "Development of High Sensitivity Spectrometers for In Vivo Measurements" International Workshop on *In Vivo* ESR and ESR Imaging and IV Girse National Congress. L'Aquila, Italy. (September 10-14, 1995)

25. Liu K.J., Shi X., Jiang J., Gabrys H., Walczak T., Swartz H.M.: Reduction of Cr(VI) in algae and higher plants and its implication in Cr(VI) detoxification pathway in ecological systems, V COMTOX Symposium on Toxicology and Clinical Chemistry of Metals, Vancouver, Canada 10-13 July 1995
26. H.M. Swartz, G. Bacic, B. Gallez, F. Goda, P. James, J. Jiang, K.J. Liu, K. Mader, T. Nakashima, J. O'Hara, T. Shima, T. Walczak: "Use of In Vivo EPR Spectroscopy for Measuring Pertinent Concentrations of Oxygen" International Workshop on "In Vivo" ESR and ESR Imaging and IV Girse National Congress. L'Aquila, Italy (September 10-14, 1995)
27. H.M. Swartz and T. Walczak: "Considerations for Developing In Vivo EPR for Clinical Applications", Fourth Meeting of the International Society of Magnetic Resonance in Medicine New York City (April 27-May 3, 1996).
28. H.M. Swartz, T. Walczak, J. O'Hara, J. Dunn: What Does EPR Oximetry With Solid Particles Measure-And How Does This Relate To Other Measures of pO₂?" ISOTT Meeting, Scotland (August 19-23, 1996).
29. H.M. Swartz and T. Walczak: Challenges and Opportunities in Moving an Experimental Technique (EPR Oximetry) from the Laboratory to the Clinic" 25th Annual Meeting of International Society on Oxygen Transport to Tissue, Milwaukee, WI. (August 19-14, 1997).
30. H.M. Swartz, B. Gallez, O. Grinberg, P. James, K. Leopold, K.J. Liu, K. Mader, J. O'Hara, T. Panz and T. Walczak: In Vivo EPR Spectroscopy: Recent Developments Leading to Clinical Studies, 2nd International Conference on Bioradicals and 5th International Workshop on ESR (EPR) Imaging and In Vivo Spectroscopy, Yamagata, Japan. (October 12-16, 1997).
31. T. Walczak and H.M. Swartz: "Optimization of L-Band EPR Spectrometers for In Vivo Oximetry," 2nd International Conference on Bioradicals and 5th International Workshop on ESR (EPR) Imaging and In Vivo Spectroscopy, Yamagata, Japan. (October 12-16, 1997).
32. M. Miyake, KJ Liu, TM Walczak, and HM Swartz: "In Vivo Dosimetry: Opportunities and Progress" International Conference on Biodosimetry and 5th International Symposium on ESR Dosimetry and Applications, Moscow, Russia (June 22-26, 1998).
33. Appenroth K-J, Gabrys H., Stoeckel J., Bischoff M., Walczak T.: Kinetics of chromate uptake and reduction in fronds of the duckweed *Spirodela polyrrhiza*. EPR

Workshop on In Vivo EPR and Related Studies, Dartmouth College, Hanover, New Hampshire, USA. (September 14-18, 1998)

34. Kaszycki P., Jaglarz A., Gabrys H., Walczak T., Koloczek H.: Chromium (VI) bioremediation with selected yeast strains, accumulation and reduction kinetics of Cr(VI) in the cell. *ibid.*, p.61

35 Walczak T. Invited Speaker. Presentation: "Instrumental Challenges and Potential Solutions," Rocky Mountain Symposium, Denver, CO (August 1-5, 1999).

36. F.J.L. Robb, J. Thomas Vaughan, P. Lesniewski, T.M. Walczak and H.M. Swartz: "Development of a Tuned TEM Resonator for In Vivo EPR", International Workshop on Techniques and Bio-Medical Applications of In Vivo EPR and PEDRI, University of Aberdeen, Scotland (September 12th-17th, 1999).

37. H. Hirata, T. Walczak and H.M. Swartz: "Electronically Tunable Surface-Coil-Type Resonator for L-Band EPR Spectroscopy", International Workshop on Techniques and Bio-Medical Applications of In Vivo EPR and PEDRI, University of Aberdeen, Scotland (September 12th-17th, 1999).

38 H.M. Swartz and T. Walczak: "Prospects for the Use of EPR Oximetry in Clinical Practice," International Workshop on Techniques and Bio-Medical Applications of In Vivo EPR and PEDRI, University of Aberdeen, Scotland, U.K. (September 12-17, 1999).

39. H. Hirata, T. Walczak, Z-W Luo, H.M. Swartz and M. Ono, "Tunable EPR Resonators: Control Techniques and Advantages for Biomedical EPR Study," 9th International Meeting on EPR Studies of Viable Systems, Dartmouth Medical School, Hanover, NH USA (September 8-14, 2001).

40. T. Walczak, W. Froncisz and H.M. Swartz, "Practical Considerations on Sensitivity of Low Frequency EPR for *In Vivo* Measurements," 9th International Meeting on EPR Studies of Viable Systems, Dartmouth Medical School, Hanover, NH USA (September 8-14, 2001).

41. V. Kozlyuk, H.M. Swartz and T. Walczak, "Testing the Microwave Bridge Insensitive to Phase and Frequency Noise," 9th International Meeting on EPR Studies of Viable Systems, Dartmouth Medical School, Hanover, NH USA (September 8-14, 2001).

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