

Robert J. Sprafka: Publications

(ENERGY RESEARCH AND ENERGY APPLICATIONS)

PATENT # 5,949,153 issued Sept. 7, 1999. "Multi-Engine Controller" Raymond R. Tison, Ross F. Nigro, Robert J. Sprafka. Consolidated Natural Gas Service Company, Inc. Pittsburgh, PA.

"Testing of a Buried LNG Tank," with J.M. Jurns, G. Pease, R. R. Tison, R. F. Nigro, presented at the Cryogenic Engineering Conference and International Cryogenic Materials Conference, Portland, Oregon, July, 1997. [REFEREED CONFERENCE PAPER]

"Market Assessment of Natural Gas Engine-Driven Rotary Screw Air compressors in The United States and Canada," with R. R. Tison and R. F. Nigro, final report under contract to the American Gas Association and The Industrial Gas Technology Commercialization Center, May, 1996. [CONTRACT RESEARCH REPORT]

"WHEC-5 Transitions to Hydrogen Workshop," with Raymond R. Tison, Int. J. Hydrogen Energy 11, 143(1986) [REFEREED PAPER]

"Hydrogen Fueled - Hydrogen Transport Rail System; A NASA Proposal," with A. L. Bain and R. R. Tison, presented at the 5th Intersociety Cryogenics Symposium at the 1984 ASME Winter Meeting, New Orleans, December, 1984. [REFEREED CONFERENCE PAPER]

"Transitions to Hydrogen," Organizer and Co-Moderator of this Workshop at World Hydrogen Energy Conference V, Toronto, July, 1984. [INVITED CONFERENCE WORKSHOP]

"Systems for Liquid Hydrogen From Non-Fossil Resources for the Kennedy Space Shuttle Program," with R. R. Tison, W. J. D. Escher and W. H. Boggs, presented at the World Hydrogen Energy Conference V, Toronto, July, 1984. [REFEREED CONFERENCE PAPER]

"The Dedicated Natural Gas School Bus," with R. R. Tison, final report under contract to Consolidated Natural Gas Service Co., Pittsburgh, July 1984. [CONTRACT RESEARCH REPORT]

"Natural Gas Transportation: Actions, Markets, and Economics," with R. R. Tison, presented at the Institute of Gas Technology Symposium, Non-petroleum Vehicular Fuels IV, Washington, DC, April, 1984. [INVITED CONFERENCE PAPER]

"A Preliminary Assessment of Natural-Gas-Fueled Urban Bus Fleets," with R. R. Tison, presented at the 2nd International Symposium of TRANSPAC 184, Baltimore, March, 1984. [CONTRIBUTED CONFERENCE PAPER]

"Hydrogen Production: State-of-the-Art Evaluation in FPL's Service Area Context," with R. W. Foster and W. J. D. Escher, final report under contract for Florida Power and Light Company, August, 1983. [CONTRACT RESEARCH REPORT]

"Study of Systems and Technology for Liquid Hydrogen Production Independent of Fossil Fuels," with W. J. D. Escher, final report under contract No. NAS10-10541 to NASA, August, 1983. [CONTRACT RESEARCH REPORT]

"The Practical and Economic Considerations of Converting Highway Vehicles to Use Natural Gas as a Fuel," with R. L. Bechtold, T. J. Timbario and R. R. Tison, presented at the SAE Specialty Conference ' Compressed Natural Gas as a Motor Vehicle Fuel, Pittsburgh, June, 1983. [INVITED CONFERENCE PAPER]

"Safety Issues Surrounding the Use and Operation of Compressed Natural Gas Vehicles," with R. R. Tison, R. L. Bechtold and T. J. Timbario, presented at the SAE Specialty Conference Compressed Natural Gas as a Motor Vehicle Fuel, Pittsburgh, June, 1983. [INVITED CONFERENCE PAPER]

(ENERGY AND ENERGY APPLICATIONS-cont.)

"NGFV's -- How Large is the Potential Market?," with R. R. Tison and W. J. Vitous, presented at the SAE Specialty Conference Compressed Natural Gas as a Motor Vehicle Fuel, Pittsburgh, June, 1983. [INVITED CONFERENCE PAPER]

"Hydrogen From Renewable Energy: Photo-voltaic / Water Electrolysis as an Exemplary Approach," with R. R. Tison and W. J. D. Escher, presented at the 20th Space Congress, Cocoa Beach, Florida, April, 1983. [REFEREED CONFERENCE PAPER]

"Advancement of Gaseous Fuels for Highway Use," with R. L. Bechtold, T. J. Timbario and R. R. Tison, presented at the Mid-Atlantic Energy Conference, Baltimore, December, 1982. [CONTRIBUTED CONFERENCE PAPER]

"Assessment of Options for Refueling Non-Fleet Natural Gas Fueled Vehicles," with R. R. Tison, final report under contract to Consolidated Natural Gas Service Company, Pittsburgh, August, 1982. [CONTRACT RESEARCH REPORT]

"Developments in Methane Fueled Vehicle Technology," with R. R. Tison, presented at the 9th Energy Technology Conference, Washington, DC, February, 1982. [INVITED CONFERENCE PAPER]

"Study of Alternative Fuels for Use in Internal Combustion Engines," contributor to World Bank Energy Report 2, November, 1981. [CONTRACT RESEARCH REPORT]

(HEALTH SERVICES DELIVERY RESEARCH)

"A System for Screening the Ambulatory Care Performance of Family Practice Residents Using a Health Information System," with C. W. Given, Journal of Medical Systems 7, 285 (1983). [REFEREED PAPER]

"Evaluating Primary Ambulatory Care With A Health Information System," with Charles W. Given, Malachy Browne and Elaine Breck, Journal of Family Practice 12, 293 (1981) [REFEREED PAPER]

"Development of Methods for Utilizing Data from a Health Information System to Make Clinical Decisions About Resident's Ambulatory Care Performance," with C. W. Given, Malachy Browne, L. E. Simoni and E. C. Breck, A 1.5 hour workshop at the Spring 1980 meeting of the Society for Teachers of Family Medicine. [INVITED CONFERENCE WORKSHOP]

"Testing a Method to Identify Patients Who Use Primary Care Services to Meet Psycho-social Needs: A Comparison Based on a Health Information System With Criteria from Medical Records," with C. W. Given, R. S. Gallin and L. E. Simoni, presented at the APHA Annual Meeting, November, 1977. [CONTRIBUTED CONFERENCE PAPER]

"The Use of Computer Generated Patient Profiles to Evaluate Resident Performance in Patient Care," with Charles Given, Lewis Simoni and Rita Gallin, Journal of Family Practice 5, 831 (1977). [REFEREED PAPER]

"The Development and Use of Patient Profiles in a Primary Care Setting," with Charles Given and Lewis Simoni, Michigan Department of Public Health Monograph, January, 1977. [MONOGRAPH commissioned by MDPH]

"Application of Medical Cybernetics to Health Care Delivery," with W. P. Drescher, ACM Computer Conference, February, 1974. [CONTRIBUTED CONFERENCE PAPER]

"Implications of Medical Cybernetics for Health Care Delivery and the Clinical information Structure," with W. P. Drescher, NSF Telemedicine Conference, Ann Arbor, Michigan, October, 1973. [INVITED CONFERENCE PAPER]

(HIGH ENERGY PARTICLE PHYSICS EXPERIMENTAL RESEARCH)

"Test of Pole Extrapolation Procedures in $pp \rightarrow \Delta^{++} n$ at 6 GeV/c," with J. D. Mountz, Z. Ming Ma, G. A. Smith, A. Lennox, J. A. Poirer, J. P. Prukop, C. A. Rey, O. R. Sander, P. Kirk, R. D. Klem and I. Spirn, BAPS 18, 716 (1973). [CONTRIBUTED CONFERENCE PAPER]

"A Formation Study of N-Nbar Interactions Between 1.09 and 3.45 GeV/c: IV-Features of Annihilations into K-Kbar and π Mesons," with B. Y. Oh, P. S. Eastman, Z. Ming Ma, D. L. Parker and G. A. Smith, Nuclear Phys. B63, 1 (1973). [REFEREED PAPER]

"A Formation Study of N-Nbar Interactions Between 1.09 and 3.45 GeV/c: III-Resonance Production," with Z. Ming Ma, P. S. Eastman, B. Y. Oh, D. L. Parker and G. A. Smith. Nuclear Phys. B51, 77 (1973). [REFEREED PAPER]

"A Formation Study of N-Nbar Interactions Between 1.09 and 3.45 GeV/c: II-Strange Particles," with B. Y. Oh, P. S. Eastman, Z. Ming Ma, D. L. Parker and G. A. Smith, Nuclear Phys. B51, 57 (1973). [REFEREED PAPER]

"A Formation Study of N-Nbar Interactions Between 1.51 and 2.90 GeV/c: I-Topological and Reaction Cross Sections," with P. S. Eastman, Z. Ming Ma, B. Y. Oh, D. L. Parker and G. A. Smith, Nuclear Phys. B51, 29 (1973). [REFEREED PAPER]

"A Study of Antiproton-Nucleon Annihilations Between 1.51 and 2.90 GeV/c," with Z. Ming Ma, P. S. Eastman, B. Y. Oh, D. L. Parker and G. A. Smith. BAPS 18, 89 (1973). [CONTRIBUTED CONFERENCE PAPER]

"Features of pbar-p Annihilations into K, Kbar, and π Mesons," with B. Y. Oh, P. S. Eastman, Z. Ming Ma, D. L. Parker and G. A. Smith, BAPS 18, 89 (1973). [CONTRIBUTED CONFERENCE PAPER]

"A Test of Pole Extrapolation Procedures in $pp \rightarrow \Delta^{++} n$ at 6 GeV/c," with Z. Ming Ma, J. D. Mountz, G. A. Smith, A. Lennox, J. A. Poirer, J. P. Prukop, C. A. Rey, O. R. Sander, George Theodosiou, P. Kirk, R. D. Klem and Irwin Spirn. BAPS 17, 145 (1972). [CONTRIBUTED CONFERENCE PAPER]

"A Direct Channel Formation Study in the Antiproton Nucleon System Between 1.10 and 2.90 GeV/c," with Z. Ming Ma, P. S. Eastman, James Mountz, D. L. Parker, P. Zeman, B. Y. Oh and G. A. Smith, presented at the 3rd International Conference on Experimental Meson Spectroscopy, April 1972. [CONTRIBUTED CONFERENCE PAPER]

"Antiproton-Proton Elastic Scattering From 1.51 - 2.90 GeV/c," with D. L. Parker, B. Y. Oh and G. A. Smith, Nuclear Phys. B32, 29 (1971). [REFEREED PAPER]

"I = 1 Enhancement Near 2360 MeV Observed in Nbar-N Kaon Annihilation Cross Sections," with B. Y. Oh, D. L. Parker, P. S. Eastman, G. A. Smith and Z. Ming Ma, Phys. Rev. Lett. 24, 1257 (1970). [REFEREED PAPER]

"Pion Exchange Dominance in the Reaction $pp \rightarrow n\Delta^{++}$ (1236) at High Energies," with Z. Ming Ma, G. A. Smith and G. T. Williamson, Phys. Rev. Lett. 24, 1031 (1970). [REFEREED PAPER]

"An Explanation for the I = 1 Structure in the pbar-N Total Cross Section Near 2.35 GeV," with Z. Ming Ma, B. Y. Oh and G. A. Smith, BAPS 15, 537 (1970). [CONTRIBUTED CONFERENCE PAPER]

"Neutral K Meson Production in pbar-p and pbar-d Interactions in the 1.5 - 2.0 GeV/c Region," with B. Y. Oh, P. Eastman, Z. Ming Ma and G. A. Smith, BAPS 15, 639 (1970). [CONTRIBUTED CONFERENCE PAPER]

(HIGH ENERGY PARTICLE PHYSICS EXPERIMENTAL RESEARCH-cont.)

"Antiproton-Proton Annihilations into $\kappa^+ \kappa^- 2\pi$ and $\kappa^+ \kappa^- 3\pi$ from 1.51 to 1.95 GeV/c," with D. L. Parker and G. A. Smith, BAPS 15, 640 (1970). [CONTRIBUTED CONFERENCE PAPER]

"Backward pbar-n Elastic Scattering Between 1.60 and 2.0 GeV/c," with Z. Ming Ma, Richard C. Liedtke and G. A. Smith, BAPS 15, 640 (1970). [CONTRIBUTED CONFERENCE PAPER]

"An I = 1 Enhancement Near 2360 MeV Observed in N-Nbar Kaon Annihilation Cross Sections," with B. Y. Oh, D. L. Parker, P. S. Eastman, G. A. Smith and Z. M. Ma, presented at the XVth International Conference on High Energy Physics, Kiev, 1970. [CONTRIBUTED CONFERENCE PAPER]

"Pion Exchange Dominance in the Reaction $pp \rightarrow n \Delta^{++}$ (1236) at High Energies," with Z. Ming Ma, G. A. Smith and G. T. Williamson, presented at the XVth International Conference on High Energy Physics, Kiev, 1970. [CONTRIBUTED CONFERENCE PAPER]

"Salient Features of the Processes $pbar-p$, $pbar-n \rightarrow m\pi$ and $K Kbar m\pi$ in the 1.5 - 3.0 GeV/c Region," with B. Y. Oh, D. L. Parker, P. S. Eastman, G. A. Smith and Z. M. Ma, presented at the XVth International Conference on High Energy Physics, Kiev, 1970. [CONTRIBUTED CONFERENCE PAPER]

"The Reaction $pbar-p \rightarrow 4\pi$: $\omega^0 - \rho^0$ Interference?," with B. Y. Oh, D. L. Parker and G. A. Smith, presented at the XVth International Conference on High Energy Physics, Kiev, 1970. [CONTRIBUTED CONFERENCE PAPER]

"Momentum Spectra of Charged Pions Produced in Proton-Proton Interactions Between 13 and 28.5 GeV/c," with Dennis B. Smith and Jared A. Anderson, Phys. Rev. Lett. 23, 1064 (1969). [REFEREED PAPER]

"Pole Extrapolation Results From $pp \rightarrow \Delta^{++} n$ at 6.6 GeV/c," with Z. Ming Ma, Gerald A. Smith, Eugene Colton and Peter Schlein, Phys. Rev. Lett. 23, 342 (1969). [REFEREED PAPER]

"Two Prong Final States in Proton-Proton Interactions at 13, 18, 21, 24, and 28 GeV/C," with Z. Ming Ma, D. Horton and G. A. Smith, BAPS 14, 23 (1969). [CONTRIBUTED CONFERENCE PAPER]

"Four and Five Pion Antiproton Annihilations in Hydrogen from 1.51 to 1.95 GeV/c," with P. S. Eastman, Z. Ming Ma, D. L. Parker, G. A. Smith and B. Y. Oh, BAPS 14, 637 (1969). [CONTRIBUTED CONFERENCE PAPER]

"Two and Six Prong Final States in pbar-p Interactions from 1.51 to 1.95 GeV/c," with B. Y. Oh, P. S. Eastman, Z. Ming Ma, D. L. Parker and G. A. Smith, BAPS 14, 637 (1969). [CONTRIBUTED CONFERENCE PAPER]

"Further Evidence for an Odd-C Boson of Mass Near 2.37 GeV," with Z. Ming Ma, B. Y. Oh, D. L. Parker and G. A. Smith, presented at the High Energy Physics Conference at Boulder, Colorado, August, 1969. [CONTRIBUTED CONFERENCE PAPER]

"Direct Channel Resonances in pbar-N Collisions from 1.5 to 2.0 GeV/c," with Z. Ming Ma, D. L. Parker, G. A. Smith, M. A. Abolins and A. Rittenberg, presented at the XIVth International conference on High Energy Physics, Vienna, 1968. [CONTRIBUTED CONFERENCE PAPER]

"The Reaction $pp \rightarrow p n \pi^+$ at 6.6 GeV/c. OPE and Pole Extrapolation," with Z. Ming Ma, G. A. Smith, E. Colton and P. Schlein, presented at the XIVth International Conference on High Energy Physics, Vienna, 1968. [CONTRIBUTED CONFERENCE PAPER]

(HIGH ENERGY PARTICLE PHYSICS EXPERIMENTAL RESEARCH-cont.)

"Reaction $pp \rightarrow \Delta^{++} n$ at 6.6 GeV/c and One Pion Exchange," with Z. Ming Ma, G. A. Smith, E. Colton and P. Schlien, BAPS 13, 588 (1968). [CONTRIBUTED CONFERENCE PAPER]

"Extrapolation to the Pion Exchange Pole for $pp \rightarrow \Delta^{++} n$ at 6.6 GeV/c," with E. Colton, P. Schlein, Z. Ming Ma and G. A. Smith, BAPS 13, 588 (1968). [CONTRIBUTED CONFERENCE PAPER]

"Multi-particle Final States Produced in Proton-Proton Interactions Between 13 and 28.5 GeV/c," with Dennis B. Smith, Jerry A. Anderson and Janos Kirz, UCRL Abstract 18523, BAPS 13, 1641 (1968). [CONTRIBUTED CONFERENCE PAPER]

"Particle Beam Profiling System," with Robert E. Gilmer, Franklin D. Neu and Joseph E. Strople, UCRL 17213, Rev. Sci. Inst. 38, 375 (1967). [REFEREED PAPER]

"Two-Charged-Particle Final States From $\pi^- + p$ Interactions at 2.7 GeV/c," with D. H. Miller, L. Gutay, P. B. Johnson, F. J. Loeffler, R. L. McIlwain and R. B. Willman, Phys. Rev. 153, 1423 (1967). [REFEREED PAPER]

"Energy Dependence of Charged-Prong Multiplicity in p-p Interactions," with Jared A. Anderson, Orin I. Dahl, Jerome H. Friedman, Janos Kirz, Michael A. Wahlig, Lawrence H. Smith and Thomas B. Day, UCRL 17366 Abstract, BAPS 12, 488 (1967). [CONTRIBUTED CONFERENCE PAPER]

"Two Prong Interactions of 2.7 GeV/c π^- Mesons in Hydrogen," with P. B. Johnson, L. Gutay, F. J. Loeffler, R. L. McIlwain, D. H. Miller and R. B. Willman, BAPS 11, 54, (1966). [CONTRIBUTED CONFERENCE PAPER]

"Improved Automatic Track Ionization Measurements from the Scanning Measuring Projector," with J. G. Asbury and R. O. Haxby, BAPS 10, 79 (1965). [CONTRIBUTED CONFERENCE PAPER]

"Single Pion Photo-production in Deuterium," with T. R. Palfrey, Jr., and R. O. Haxby, BAPS 9, 408 (1964). [CONTRIBUTED CONFERENCE PAPER]

"Photo-production of Positive Pions from Protons," with L. B. Mortara, R. O. Haxby and T. R. Palfrey, Jr., BAPS 8, 67 (1963). [CONTRIBUTED CONFERENCE PAPER]