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**SELECTED LIST OF PUBLICATIONS AND PATENTS**  
**(MASSOUD ARVANAGHI, PH.D.)**

1. Tetrazolium Halide Compounds and Methods: Brigati, D.J.; Nagubandi, S.; and Arvanaghi, M.; U.S. Patent, 5,116,732, 1992.
2.  $^{13}\text{C}$  NMR Spectroscopic Study of 2-Aryl-2-benzonorborneyl Cations: Prakash, G.K.S.; Ohannesian, L.; Arvanaghi, M.; and Olah, G.A.; Gazz. Chim. Ital., 1987, 117, 213.
3. Regioselective para-Halogenation of Phenols, Phenol Ethers, and Anilines with Halodimethylsulfonium Halide: Olah, G.A.; Ohannesian, L.; and Arvanaghi, M.; Synthesis, 1986, 868.
4. Trifluoromethanesulfonic Acid/Triethylsilane: A New Ionic Hydrogenation Reagent for the Reduction of Diaryl and Dialkyl-Aryl Ketones to Hydrocarbons: Olah, G.A.; Arvanaghi, M.; and Ohannesian, L.; Synthesis, 1986, 770.
5. Formylating Agents: Olah, G.A.; Ohannesian, L.; and Arvanaghi, M.; Chem. Rev., 1987, 87, 671.
6. Formyl Transfer to Grignard Reagents. 3-Phenylpropionaldehyde: Olah, G.A. and Arvanaghi, M.; Organic Synthesis, 1986, 64, 114.
7. Deuterium Isotope Effect on the  $^{13}\text{C}$  NMR Spectra of 1-Methylcyclobutyl and Trishomocyclopropenyl Cations: Prakash, G.K.S.; Arvanaghi, M.; and Olah, G.A.; J. Am. Chem. Soc., 1985, 107, 6017.
8. Preparation and  $^{13}\text{C}$  NMR Spectroscopic Study of 2,6-Disubstituted 2,6-Adamantanediyl Dications: Prakash, G.K.S.; Krishnamurthy, V.V.; Arvanaghi, M., and Olah, G.A.; J. Org. Chem., 1985, 50, 3985.
9. Thiocarbonyl to Carbonyl Group Transformation with Nitrosonium tetra-Fluoroborate: Olah, G.A.; Arvanaghi, M.; Ohannesian, L.; and Prakash, G.K.S.; Synthesis, 1984, 785.
10. Preparation of Aldehydes via Formylation of Grignard, Organolithium or Dialkyl (1-lithioalkyl) Phosphate Reagents using N-Formylmorpholines: Olah, G.A.; Ohannesian, L.; and Arvanaghi, M.; J. Org. Chem., 1984, 49, 3856.
11. Preparation of Aldehydes and Ketones from N,N-Dimethylformamides and Grignard Reagents: Olah, G.A.; Prakash, G.K.S.; and Arvanaghi, M.; Synthesis, 1984, 228.
12. Preparation of  $\alpha$ -Chloroketones from Enolsilylethers with Sulfuryl Chloride Fluoride and Sulfuryl Chloride: Olah, G.A.; Ohannesian, L.; Arvanaghi, M.; and Prakash, G.K.S.; J. Org. Chem., 1984, 49, 2032.

13.  $\alpha$ -Nitro diarylmethyl Cations: The First Long-Lived  $\alpha$ -Nitro Substituted Carbocation: Olah, G.A.; Prakash, G.K.S.; Arvanaghi, M.; Krishnamurthy, V.V.; and Narang, S.C.; *J. Am. Chem. Soc.*, 1984, 106, 2378.
14. Azidocarboxonium Ions: Mertens, A.; Arvanaghi, M.; and Olah, G.A.; *Chem. Ber.*, 1983, 116, 3926.
15. Tin (IV) Chloride-Catalyzed Preparation of Aroyl Cyanides from Aroyl Chlorides and Cyanotrimethylsilane: Olah, G.A.; Arvanaghi, M.; and Prakash, G.K.S.; *Synthesis*, 1983, 636.
16. Aminodiazonium Ions: Preparation,  $^1\text{H}$ ,  $^{13}\text{C}$ , and  $^{15}\text{N}$  NMR Structural Studies and Electrophilic Amination of Aromatics: Mertens, A.; Lammertsma, K.; Arvanaghi, M.; and Olah, G.A.; *J. Am. Chem. Soc.*, 1983, 105, 5657.
17. General Procedure for Conversion of Acetals and Ketones into 2-Alkoxyalkanenitriles using Cyanotrimethylsilane: Kirchmeyer, S.; Mertens, A.; Arvanaghi, M.; and Olah, G.A.; *Synthesis*, 1983, 498.
18. The endo-3,10-Dimethyltricyclo [5.2.1.0<sub>2,6</sub>] deca-4,8-diene-3,10-diyl Dication: Olah, G.A.; Arvanaghi, M.; and Prakash, G.K.S.; *Angew. Chem.*, 1983, 95, 726.
19. Polymeric Perfluorinated Resin Sulfonic Acid (Nafion-H) Catalyzed Fries Rearrangement of Aryl Esters: Olah, G.A.; Arvanaghi, M.; and Krishnamurthy, V.V.; *J. Org. Chem.*, 1983, 48, 3359.
20. Zinc Iodide-Catalyzed Preparation of Aroyl Azides from Aroyl Chlorides and Trimethylsilyl Azide: Prakash, G.K.S.; Iyer, P.S.; Arvanaghi, M.; and Olah, G.A.; *J. Org. Chem.*, 1983, 48, 3358.
21. High Field  $^1\text{H}$  and  $^{13}\text{C}$  NMR Spectroscopic Study of the 2-Norbornyl Cation: Olah, G.A.; Prakash, G.K.S.; Arvanaghi, M.; and Anet, F.A.L.; *J. Am. Chem. Soc.*, 1982, 104, 7105.
22. Preparation and  $^{13}\text{C}$  and  $^{15}\text{N}$  NMR Spectroscopic Study of Cyanocarbenium Ions. Substituent Effects on the Extent of Mesomeric Nitrenium Ion Character in Cyanodiphenylmethyl Cations. The search for Related  $\alpha$ -Cyanocarbenium Ions: Olah, G.A.; Arvanaghi, M.; and Prakash, G.K.S.; *J. Am. Chem. Soc.*, 1982, 104, 1628.
23. Preparation of Aldehydes via Formylation of Grignard or Organolithium Reagents with N-Formylpiperidine: Olah, G.A. and Arvanaghi, M.; *Angew. Chem. Int. Ed. Engl.*, 1981, 20, 878.
24. Reductive Hydrolysis of 2,4-Dinitrophenylhydrazones Using Vanadium (II) Chloride: Olah, G.A.; Chao, Y.L.; Arvanaghi, M.; and Prakash, G.K.S.; *Synthesis*, 1981, 476.
25.  $^{13}\text{C}$  NMR Spectroscopic Study of the Application of the "Tool of Increasing Electron Demand" to the 7-Aryl-1-Norbornyl, 7-Aryl-7-Norbornyl, 2-Aryl-1-2-bicyclo[2.1.2]hexyl, 1-Aryl-1-cyclobutyl, and 3-Aryl-3-nortricyclyl Cations: Olah, G.A.; Berrier, A.L.; Arvanaghi, M.; and Prakash, G.K.S.; *J. Am. Chem. Soc.*, 1981, 103, 1122.
26. Palladium Catalyzed Reduction of Multiple Bonds with Magnesium/Methyl Alcohol: Olah, G.A.; Prakash, G.K.S.; Arvanaghi, M.; and Bruce, M.R.; *Angew. Chem. Int. Ed. Engl.*, 1981, **20**, 92.
27. (Haloalkyl)oxonium and (Haloalkyl)carboxonium Ions. Preparation, Nuclear Magnetic Resonance Structural Study, and Alkylating Ability: Olah, G.A.; Yu, S.; Liang, G.; Matseescu, G.D.; Bruce, M.R.; Donovan, D.J.; and Arvanaghi, M.; *J. Org. Chem.*, 1981, **46**, 571.
28. Deoxygenation of Pyridine N-Oxide with Trimethyl (Ethyl) Amine/Sulfur Dioxide Complex: Olah, G.A.; Arvanaghi, M.; and Vankar, Y.D.; *Synthesis*, 1980, 660.

29. Improved Transformation of Nitro Compounds into Carbonyl Compounds by Hydrogen Peroxide/Potassium Carbonate: Olah, G.A.; Arvanaghi, M.; Vankar, Y.D.; and Prakash, G.K.S.; *Synthesis*, 1980, 662.
30. Significant Mesomeric Nitrenium Ion Character of the Cyanodiphenylmethyl Cation. The First Long-Lived Cyanocarbenium Ion: Olah, G.A.; Prakash, G.K.S.; and Arvanaghi, M.; *J. Am. Chem. Soc.*, 1980, 102, 6640.
31. Reduction of  $\alpha$ -Haloketones with Sodium Iodide/Chlorotrimethylsilane: Olah, G.A.; Arvanaghi, M.; Vankar, Y.D.; *J. Org. Chem.*, 1980, 45, 3531.
32. Reductive Cleavage of Oximes with Vanadium (II) Chloride: Olah, G.A.; Arvanaghi, M.; and Prakash, G.K.S.; *Synthesis*, 1980, 220.
33. Dimethyl Sulfoxide/Chlorosulfonyl Isocyanate: An Extremely Mild Reagent for Oxidation of Alcohols to Carbonyl Compounds: Olah, G.A.; Vankar, Y.D.; and Arvanaghi, M.; *Synthesis*, 1980, 141.
34. Conversion of Epoxides and Enamines into  $\alpha$ -Haloketones with Halodimethylsulfonium Halides: Olah, G.A.; Vankar, Y.D.; and Arvanaghi, M.; *Tetrahedron Letters*, 1979, 3653.
35. Deoxygenation of Sulfoxides with Sodium Iodide/Iodine/Trimethyl (Ethyl) Amine/Sulfur Dioxide or Sodium Iodide/Pyridine/Sulfur Trioxide Complexes: Olah, G.A.; Vankar, Y.D.; and Arvanaghi, M.; *Synthesis*, 1979, 984.
36. Dethioacetalization with Bromodimethylsulfonium Bromide: Olah, G.A.; Vankar, Y.D.; Arvanaghi, M.; Prakash, G.K.S.; *Synthesis*, 1979, 720.
37. Oxidation of Thiols to Disulfides with Bromodimethyl sulfonium Bromide: Olah, G.A.; Arvanaghi, M.; and Vankar, Y.D.; *Synthesis*, 1979, 721.
38. Formic Acid Anhydride: Olah, G.A.; Vankar, Y.D.; Arvanaghi, M.; and Sommer, J.; *Angew. Chem. Int. Ed. Engl.*, 1979, 18, 614.