

Contents

Chemistry and Biology

Characterization of Potential Organic Emissions from a Low-Btu Gasifier for Coal Conversion <i>R. L. Hanson, R. E. Royer, R. L. Carpenter and G. J. Newton</i>	3
Metabolism and Macromolecular Binding of Benzo[a]Pyrene and its Noncarcinogenic Isomer Benzo[e]Pyrene in Cell Culture <i>James K. Selkirk and Michael C. MacLeod</i>	21
Differences in Metabolism Provide a Basis for the Low Mutagenicity and Carcinogenicity of Benzo[e]Pyrene Compared to Benzo[a]Pyrene <i>R. E. Lehr, C. W. Taylor, S. Kumar, W. Levin, R. Chang, A. W. Wood, A. H. Conney, D. R. Thakker, H. Yagi, H. D. Mah and D. M. Jerina. . .</i>	37
Polycyclic Hydrocarbons and Syrian Hamster Embryo Cells: Cell Transformation, Enhancement of Viral Transformation and Analysis of DNA Damage <i>Bruce C. Casto</i>	51
Quantitative Extraction of Polycyclic Aromatic Hydrocarbons and Other Hazardous Organic Species from Process Streams Using Macroreticular Resins <i>Zoe A. Grosser, Judith C. Harris and Philip L. Levins</i>	67

Chemistry

PAH Emissions from a Stratified-Charge Vehicle With and Without Oxidation Catalyst: Sampling and Analysis Evaluation <i>Frank S.-C. Lee, T. J. Prater and F. Ferris</i>	83
--	----

Analysis of Organic Pollutants by Synchronous Luminescence Spectrometry <i>T. Vo-Dinh, R. B. Gammage and A. R. Hawthorne.</i>	1
The Identification of Polynuclear Aromatic Hydrocarbon Mixtures in High-Performance Liquid Chromatography Fractions Utilizing the Shpol'skii Effect <i>Anders Colmsjö and Ulf Stenberg.</i>	121
Photoreactivity of Selected Aromatic Hydrocarbons in Water <i>Richard G. Zepp and Patricia F. Schlotzhauer.</i>	141
Photolysis of Triphenylene in Rigid Matrices at Low Temperature <i>M. Lamotte, S. Risemberg, J. Pereyre and J. Joussot-Dubien</i>	159
Thermal and Photochemical Decomposition of Particulate PAH <i>W. A. Korfmacher, D. F. S. Natusch, D. R. Taylor E. L. Wehry and G. Mamantov.</i>	165
Relative Rates of Photochemical and Biological Oxidation (<i>in vitro</i>) of Polynuclear Aromatic Hydrocarbons <i>Morris Katz, Cecilia Chan, Helle Tosine and Takeo Sakuma.</i>	71
Determination of Selected Polynuclear Aromatic Hydrocarbons in Settled Dust by High-Performance Liquid Chromatography with Multi-Wavelength Detection <i>Detlef Fechner and Bernd Seifert.</i>	191
Source Identification and Allocation of Polynuclear Aromatic Hydrocarbon Compounds in the New York City Aerosol: Methods and Applications <i>J. M. Daisey, M. A. Leyko and T. J. Kneip.</i>	201
Quantitative Analysis of Selected PAH in Aqueous Effluent by High-Performance Liquid Chromatography <i>JoAnn E. Wilkinson, Paul E. Strup and Peter W. Jones</i>	217
Methods for Characterization of Complex Mixtures of Polynuclear Aromatic Hydrocarbons <i>M. E. Snook, R. F. Severson, H. C. Higman, R. F. Arrendale and O. T. Chortvk.</i>	231
Some Analytical Aspects of the Quantitative Determination of Polynuclear Aromatic Hydrocarbons in Fugitive Emissions from Coal Liquefaction Processes <i>Curt M. White, A. G. Sharkey, Jr., Milton L. Lee and Daniel L. Vassilaros</i>	261

Precursors of Polynuclear Aromatic Hydrocarbons in Tobacco Smoke <i>Ray F. Severson, William S. Schlotzhauer, Orestes T. Chortyk, Richard F. Arrendale and Maurice E. Snook.</i>	277
Development of a Prototype Instrument for Field Monitoring of PAH Vapors <i>A. R. Hawthorne, J. H. Thorngate, R. B. Gammage and T. Vo-Dinh</i>	299
Gas Chromatographic Separation of High-Molecular Polynuclear Aromatic Hydrocarbons in Samples from Different Sources, Using Temperature-Stable Glass Capillary Columns <i>Ulf Stenberg, Tomas Alsberg, Lars Blomberg and Thomas Wännman</i>	313
Sorption Properties of Energy-Related Pollutants and Sediments <i>J. C. Means, J. J. Hassett, S. G. Wood and W. L. Banwart</i>	327
Separation and Identification of Sulfur-Containing Polycyclic Aromatic Hydrocarbons (Thiophene Derivatives) From Some PAH <i>W. Karcher, R. Depaus, J. van Eijk and J. Jacob</i>	341
Polycyclic Aromatic Hydrocarbons in the Lower Atmosphere of Karlsruhe <i>Hans Güsten and Günther Heinrich.</i>	357
Determination of Polynuclear Aromatic Hydrocarbons in the Working Environment <i>Alf Bjørseth</i>	371
Distribution of Polycyclic Aromatic Hydrocarbons with Respect to Particle Size in Pasadena Aerosols in the Submicrometer Range <i>Antonio H. Miguel.</i>	383
Characterization of Multialkylated Polycyclic Aromatic Hydrocarbons in Energy-Related Materials <i>W. H. Griest, B. A. Tomkins, J. L. Epler and T. K. Rao.</i>	395
Development of an Aqueous Polynuclear Aromatic Hydrocarbon Standard Reference Material <i>W. E. May, J. M. Brown, S. N. Chesler, F. Guenther, L. R. Hilpert, H. S. Hertz and S. A. Wise.</i>	41
Measurement of Polynuclear Aromatic Hydrocarbons and Other Hazardous Organic Compounds in Stack Gases <i>Roy L. Bennett, Kenneth T. Knapp, Peter W. Jones, JoAnn E. Wilkerson and Paul E. Strup.</i>	419

The Gas Chromatographic Separation and Determination of PAH From Industrial Processes Using Glass Capillary and Packed Columns <i>R. C. Lao and R. S. Thomas</i>	429
--	-----

Biology

Comparative Metabolism of a Series of Polycyclic Aromatic Hydro- carbons by Rat Liver Microsomes and Purified Cytochrome P-450 <i>D. R. Thakker, M. Nordqvist, H. Yagi, W. Levin, D. Ryan, P. Thomas, A. H. Conney and D. M. Jerina</i>	455
---	-----

Effects of SO ₂ on the Metabolism of Benzo[a]Pyrene in the Isolated Perfused Lung <i>D. Warshawsky, R. Niemeier, C. Warren and E. Bingham</i> . . .	473
--	-----

The Genetic Regulation of Aryl Hydrocarbon Hydroxylase Activity and Metabolism of Polycyclic Aromatic Hydrocarbons in Cell Culture <i>V. Hitchins, B. Laine and J. J. Hutton</i>	489
--	-----

Differences in Pathways of Polycyclic Aromatic Hydrocarbon Metabolism as Detected by Analysis of the Conjugates Formed <i>William M. Baird, Ruth Chemerys, Andrew A. Erickson, Ching Jer Chern and Leila Diamond</i>	507
--	-----

Hydroxylation and Conjugation at the Benzylic Carbon Atom: A Possible Mechanism of Carcinogenic Activation for Some Methyl-Substituted Aromatic Hydrocarbons <i>E. Cavalieri, R. Roth and E. Rogan</i>	517
---	-----

Bay-Region Activation of Carcinogenic Polycyclic Hydrocarbons <i>A. W. Wood, W. Levin, R. L. Chang, H. Yagi, D. R. Thakker, R. E. Lehr, D. M. Jerina and A. H. Conney</i>	531
--	-----

Studies on the Relationships Between Induction of Biotransformation and Tumor-Initiating Activity of 7,12-Dimethylbenz[a] Anthracene in Mouse Skin <i>J. DiGiovanni, D. L. Berry, T. J. Slaga and M. R. Juchau</i>	553
---	-----

<i>Ab Initio</i> Quantum Mechanical Characterization of the 7 β ,8 α ,9 α -Trihydroxy-7,8,9-Trihydrobenzo[a]Pyrene Carbonium Ion <i>Lester L. Shipman</i>	569
---	-----

Metabolism of Benzo[a]Pyrene to Oxidative and Conjugative Metabolites by Isolated Mammalian Hepatocytes <i>C. A. Jones, B. P. Moore, G. M. Cohen and J. W. Bridges</i> . . .	581
--	-----

Comparative Microbial and Mammalian Cell <i>In Vitro</i> Bioassay Assessment of Fossil Fuel-Generated Respirable Particulates <i>James P. Crowley, Anthony J. Dennis, Thomas J. Facklam and Werner L. Margard.</i>	
Immunochemical Characterization of Rat Liver Cytochromes P450 and Epoxide Hydase <i>Paul E. Thomas, Dene Ryan and Wayne Levin.</i>	
Bioactivation of Polycyclic Aromatic Hydrocarbons in the Aorta: Evidence for a Role in the Genesis of Atherosclerotic Lesions <i>Mont R. Juchau, James A. Bond, Richard M. Kocan and Earl P. Benditt</i>	
Nuclear Aryl Hydrocarbon Hydroxylase and its Role in the Activation of Benzo[a]Pyrene <i>Chung S. Yang and John M. Pezzuto</i>	
Substrate Specificity of Aryl Hydrocarbon (Benzo[a]Pyrene) Hydroxylase <i>F. B. Thomas, D. M. Thomas, D. S. Shewach and N. B. Furlong</i>	
Binding of Aromatic Hydrocarbons to DNA Catalyzed by Peroxidase and by ATP <i>E. Rogan. R. Roth and E. Cavalieri.</i>	
Synthesis and Metabolism of Cyclopenta[c,d]Pyrene <i>A. Gold, J. Schultz and E. Eisenstadt</i>	695
A Comparison of the Mutagenicity, Tumor-Initiating Activity and Complete Carcinogenicity of Polynuclear Aromatic Hydrocarbons <i>Edmon LaVoie, Victoria Bedenko, Norio Hirota, Stephen S. Hecht and Dietrich Hoffman</i>	705
Chemical Cytotoxicity: A Cancer Promoter <i>G. D. Griffin, T. D. Jones and P. J. Walsh. .</i>	
On the Metabolic Activation of 5-Methylchrysene <i>Stephen S. Hecht, Robert Mazzaresse, Shantilal Amin, Edmond La Voie and Dietrich Hoffmann.</i>	
Tumor-Initiating Activities of Various Derivatives of Benz[a] Anthracene and 7,12-Dimethylbenz[a] Anthracene in Mouse Skin <i>T. J. Slaga, G. L. Gleason, J. DiGiovanni, D. L. Berry, M. R. Juchau, P. P. Fu, K. B. Sukumaron and R. G. Harvey.</i>	753

Human Placental Aryl Hydrocarbon Hydroxylase: Genetics and Environmental Influences <i>Olavi Pelkonen, Niilo T. Kärki, Pekka Korhonen, Maila Koivisto, Risto Tuimala and Antti Kauppila</i>	
Aryl Hydrocarbon Hydroxylase in Human Cancer Populations <i>Marilyn S. Arnott, Toshio Yamauchi and Dennis A. Johnston</i>	779
Cellular Repair of DNA Damage Induced by 7,12-Dimethylbenz[a] Anthracene and its Fluoro Analogs <i>In Vitro</i> <i>Steven M. D'Ambrosio, F. Bernard Daniel and Ronald W. Hart.</i>	793
Interaction of ($\pm$)Benzo[a] Pyrene-7 β ,8 α -diol,9 α ,10 α -epoxide With Fractionated Eukaryotic DNA <i>Radhakrishnan Iyer, Larry L. Triplett, Thomas J. Slaga and John Papaconstantinou.</i>	
Studies on the Binding of B[a]P Diol Epoxide to DNA and Chromatin <i>A. Kootstra, T. J. Slaga and D. E. Olins</i>	819
Asbestos-Facilitated Membrane Uptake of Polynuclear Aromatic Hydrocarbons Studied by Fluorescence Spectroscopy: A Possible Explanation of the Cocarcinogenic Effects of Particulates and PAH <i>J. R. Lakowicz, J. L. Hylden, F. Englund, A. Hidmark and M. McNamara</i>	835
Biochemical Studies on the Metabolism and DNA-Binding of DMBA and Some of its Monofluoro Derivatives of Varying Carcinogenicity <i>F. B. Daniel, L. K. Wong, C. T. Oravec, F. D. Cazer, C'L. A. Wang, S. M. D'Ambrosio, R. W. Hart and D. T. Witiak.</i>	
Index	