LETTERS


EDITORIAL

Analytical Instruments

ARTICLES

Trends in Analytical Instrumentation: F. W. McLafferty
Trends in Analytical Scale Separations: J. W. Jorgenson
Fourier Transform Mass Spectrometry: M. L. Gross and D. L. Rempel
High-Performance Liquid Chromatography–Mass Spectrometry: J. L. Vestal
High-Resolution Nuclear Magnetic Resonance of Solids: G. E. Maciel
Nuclear Magnetic Resonance Technology for Medical Studies: T. F. Budinger and P. C. Lauterbur
Laser Chemical Analysis: R. N. Zare
Contemporary Methodology for Protein Structure Determination: M. W. Hunkapiller, J. E. Strickler, K. J. Wilson

NEWS AND COMMENT

A Cloudy Forecast for Solar Cells
Rifkin Takes Aim at USDA Animal Research
The Mystery of Florida’s Citrus Canker

Briefing: NIMH Study Finds One in Five Have Disorders; WIPP in Good Shape Says Academy; Union Sets Up Legal Fund for Occupational Health
Test-Maker Sues Stanford; Comings and Goings; DOD Buys Secure Telephones ............................................................ 324

RESEARCH NEWS

Climate Since the Ice Age Began to Melt .................................................. 326
Surprise Finding with Insect Globin Genes ................................................ 328
Femtosecond Laser Annealing of Silicon ................................................ 329

BOOK REVIEWS

From the American System to Mass Production, 1800–1932, reviewed by J. Atack; The Chemical Evolution of the Atmosphere and Oceans, J. F. Kasting; The Science of Musical Sound, R. N. Shepard; Books Received ........................................ 331

RESEARCH REPORTS

Spread of Diadema Mass Mortality Through the Caribbean: H. A. Lessios, D. R. Robertson, J. D. Cubit .................................................. 335
The Jovian Nebula: A Post-Voyager Perspective: J. T. Trauger ...................... 337
Photocontraction of Liquid Spiropyran-Merocyanine Films: I. Cabrera et al. ........ 341
Temporal Variability of the Antarctic Circumpolar Current Observed from Satellite Altimetry: L.-L. Fu and D. B. Chelton .................................................. 343
Extensive Volcanism Associated with the Separation of Australia and Antarctica: J. B. Jones and M. J. Fitzgerald ........................................ 346
Chromosomal Location of Human T-Cell Receptor Gene Tβ: P. E. Barker et al. .... 348
Frequency-Dependent Noradrenergic Modulation of Long-Term Potentiation in the Hippocampus: W. F. Hopkins and D. Johnston ...................... 350

COVER

Sequence of mass spectra, obtained using Fourier transform mass spectrometry (FTMS), shows the in situ synthesis of the bare dimer ion CoFe+ and its subsequent reactions with 1-pentene in the gas phase. Recent developments in FTMS, involving both software and hardware, now enable selected ions of interest to be stored on the order of seconds during which time they can be mixed with various reagents and their chemistries monitored through a series of more than eight reaction steps (all under computer control). See page 261. [Research by D. B. Jacobson and B. S. Freiser, Department of Chemistry, Purdue University, West Lafayette, Indiana 47907; illustration by J. Christenson and R. Cody, Nicolet Instrument Corp., Madison Wisconsin 53711]