



# NTIS Technical Reports Newsletter



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For more than 60 years, we have served as an innovative resource to Federal agencies, businesses and universities looking for high-caliber information. Our mission is straightforward: to support the nation's economic growth by providing access to information that stimulates innovation and discovery.

While you can find information on virtually any subject on the web, there's no guarantee that the information is accurate — or that it has been published by a legitimate source. NTIS undergoes a rigorous process to ensure that all the information we offer is authentic and credible. This integrity, along with the breadth and depth of our collection, is why NTIS is regarded as the nation's preeminent source of government information.

## Highlighted Categories

**Physics (46), Ocean Sciences & Technology (47),  
Mathematical Sciences (72) and Chemistry (99)**

This month, we are featuring technical documents recently received and categorized in the NTIS Subject Categories listed above.

The diversity of the NTIS collection is demonstrated in the *Related Categories* listed for each document. Related categories listed this month include:

- |                                                                 |                                                 |
|-----------------------------------------------------------------|-------------------------------------------------|
| 41 Manufacturing Technology                                     | 71 Materials Sciences                           |
| 43 Problem Solving Information for<br>State & Local Governments | 74 Military Sciences                            |
| 48 Natural Resources &<br>Earth Sciences                        | 77 Nuclear Science & Technology                 |
| 49 Electrotechnology                                            | 81 Combustion, Engines,<br>& Propellants        |
| 50 Civil Engineering                                            | 84 Space Technology                             |
| 51 Aeronautics & Aerodynamics                                   | 85 Transportation                               |
| 54 Astronomy & Astrophysics                                     | 88 Library & Information Sciences               |
| 55 Atmospheric Sciences                                         | 91 Urban & Regional Technology &<br>Development |
| 57 Medicine & Biology                                           | 92 Behavior & Society                           |
| 62 Computers, Control &<br>Information Theory                   | 94 Industrial & Mechanical Engineering          |
| 63 Detection & Countermeasures                                  | 96 Business & Economics                         |
| 68 Environmental Pollution & Control                            | 97 Energy                                       |
| 70 Administration & Management                                  | 99 Chemistry                                    |

The list of new titles in these featured categories begins on the next page.

National Technical Information Service  
U.S. Department of Commerce  
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## Subject Category Codes/ Classification

NTIS classifies citations into 39 subject categories. Each of these subject categories is divided into subcategories. This method provides sorting categories for both hard and soft sciences. All subject categories consist of three character codes: two numerics and one alpha character. The numeric codes represent entire categories, the alpha codes are used to designate subcategories within these broad categories. The number of NTIS subcategories posted to an information product average from one to five, although there are some reports with more.

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## Key to Database Fields Used

The following NTIS database fields are used in this short listing of recently acquired technical reports.

**NTIS Order Number**

**Title**

**Source**

**Report Year, Page Count**

**Report Number/ISBN13 (if available)**

**Related Categories/Sub-categories  
(where the document is also indexed)**

## Category: 46

### Physics

ADA471613

Experiments in Sound and Structural Vibrations  
Using an Air-Analog Model Ducted Propulsion  
System

Department of Defense

2007, 104pages

UND-SM07-329

Related Categories/Sub-categories:

46A (Acoustics)

46B (Fluid Mechanics)

46E (Structural Mechanics)

ADA471781

Modeling of Hurricane Impacts

Department of Defense

2007, 28 pages

Related Categories/Sub-categories:

46B (Fluid Mechanics)

47B (Dynamic Oceanography)

ADA476965

Laser Induced Shock Waves and Vaporization in  
Biological System and Material Science

Department of Defense

2008, 6 pages

Related Categories/Sub-categories:

46C (Optics & Lasers)

46E (Structural Mechanics)

57V (Radiobiology)

74D (Chemical, Biological, & Radiological  
Warfare)

95B (Tissue Preservation & Storage)

## Find More on NTIS.GOV

The documents listed here are just some of the newest in the collection. Find information on other new items, legacy documents, as well as ordering and format options in the search area of <http://www.ntis.gov>.

## Major Subject Categories

Category Codes*/Title	New for October Quantity**
41 Manufacturing Technology .....	34
43 Problem Solving Information for State & Local Governments .....	282
44 Health Care.....	93
45 Communication.....	146
46 Physics.....	192
47 Ocean Sciences & Technology .....	91
48 Natural Resources & Earth Sciences.....	196
49 Electrotechnology .....	37
50 Civil Engineering.....	75
51 Aeronautics & Aerodynamics.....	64
54 Astronomy & Astrophysics .....	48
55 Atmospheric Sciences .....	50
57 Medicine & Biology .....	399
62 Computers, Control & Information Theory .....	152
63 Detection & Countermeasures.....	33
68 Environmental Pollution & Control .....	180
70 Administration & Management.....	306
71 Materials Sciences.....	70
72 Mathematical Sciences.....	45
74 Military Sciences.....	402
75 Missile Technology.....	5
76 Navigation, Guidance, & Control.....	67
77 Nuclear Science & Technology .....	103
79 Ordnance .....	28
81 Combustion, Engines, & Propellants .....	44
82 Photography & Recording Devices.....	6
84 Space Technology.....	100
85 Transportation.....	223
88 Library & Information Sciences.....	29
89 Building Industry Technology .....	30
90 Government Inventions for Licensing .....	1
91 Urban & Regional Technology & Development.....	331
92 Behavior & Society.....	619
94 Industrial & Mechanical Engineering .....	134
95 Biomedical Technology & Human Factors .....	45
96 Business & Economics .....	358
97 Energy.....	108
98 Agriculture & Food .....	120
99 Chemistry.....	78

\* For a listing of Scope Notes that defines the specific topical content for each category, go to <http://www.ntis.gov/assets/pdf/scopenotes.pdf>

\*\* Quantities represent each new report assigned on average to 3-5 categories.

ADA476627

Aerodynamic Influence of a Helicopter on a  
Jettisoned Missile

Department of Defense

2008, 26 pages

TR-AMR-SS-08-10

Related Categories/Sub-categories:

46B (Fluid Mechanics)

51A (Aerodynamics)

51C (Aircraft)

DE2007920428

Distinction Between Difference and Differential  
Equations of Motion for Synchrotron Motion.

Department of Energy

2007, 9 pages

FERMILAB-FN-0811

Related Categories/Sub-categories:

46B (Fluid Mechanics)

DE2008925793

Design of an Optical Diffraction Radiation Beam  
Size Monitor at SLAC FFTB

Department of Energy

2008, 3 pages

SLAC-PUB-13173

Related Categories/Sub-categories:

46D (Solid State Physics)

N20080002268

Impact of Air Injection on Jet Noise

National Aeronautics and Space Administration

2007, 29 pages

Related Categories/Sub-categories:

46A (Acoustics)

N20080023333

Aberrations for Grazing Incidence Optics

National Aeronautics and Space Administration

2008, 10 pages

Related Categories/Sub-categories:

46C (Optics & Lasers)

54C (Astrophysics)

N20080025729

Alternative Method of Specifying Shock Test Criteria  
National Aeronautics and Space Administration  
2008, 48 pages  
NASA/TM-2008-215253  
Related Categories/Sub-categories:  
46G (Plasma Physics)  
84C (Manned Spacecraft)

PB2008107650

Wave Forces on Bridge Decks: State of the Art and State of the Practice Review  
Department of Transportation  
2007, 95 pages  
REPT-0-5516-1  
Related Categories/Sub-categories:  
46B (Fluid Mechanics)  
50A (Highway Engineering)

PB2008109943

High Altitude Electromagnetic Pulse (HEMP) and High Power Microwave (HPM) Devices: Threat Assessments. (Updated March 26, 2008)  
Library of Congress  
2008, 19 pages  
Related Categories/Sub-categories:  
46C (Optics & Lasers)  
46H (Radiofrequency Waves)

PB2008112570

Rock Mass Behavior and Support Response in a Longwall Panel Pre-Driven Recovery Room  
Department of Health and Human Services  
2008, 16 pages  
Related Categories/Sub-categories:  
46E (Structural Mechanics)  
48A (Mineral Industries)  
57U (Public Health & Industrial Medicine)  
68A (Air Pollution & Control)  
68G (Environmental Health & Safety)

## Category: 47

### Ocean Sciences & Technology

ADA476537

Determination of Primary Spectral Bands for Remote Sensing of Aquatic Environments  
Department of Defense  
2007, 15 pages  
NRL/JA/7330-07-8033  
Related Categories/Sub-categories:  
47C (Physical & Chemical Oceanography)  
63A (Acoustic Detection)

ADA481033

SeaSpider: Automated Information Gathering on Vessel Movements in Support of Maritime Domain Awareness  
Department of Defense  
2007, 44 pages  
Related Categories/Sub-categories:  
47A (Marine Engineering)  
62 (Computers, Control & Information Theory)  
88B (Information Systems)

DE2008932953

Neutralizing Carbonic Acid in Deep Carbonate Strata below the North Atlantic (Final Technical Report, July 14, 2004-January 14, 2008)  
Department of Energy  
2008, 22 pages  
Related Categories/Sub-categories:  
47E (Marine Geophysics & Geology)  
68 (Environmental Pollution & Control)  
68D (Water Pollution & Control)

PB2008107727

Endangered, Threatened, and Depleted Marine Mammals in U.S. Waters. A Review of Species Classification Systems and Listed Species  
Marine Mammal Commission  
2007, 88 pages  
Related Categories/Sub-categories:  
47D (Biological Oceanography)  
48B (Natural Resource Management)  
57H (Ecology)  
57Z (Zoology)

PB2008107942

Preliminary Assessment of Landslide-Induced Wave Hazards: Tidal Inlet, glacier Bay National Park, Alaska  
Department of the Interior  
2008, 62 pages  
USGS/OFR-03-100  
Related Categories/Sub-categories:  
47B (Dynamic Oceanography)  
47E (Marine Geophysics & Geology)  
85G (Marine & Waterway Transportation)

PB2008110762

Discovery and Investigation of an Early Nineteenth-Century Wooden Sailing Vessel in 2,000 Feet of Water  
Department of the Interior  
2008, 48 pages  
Related Categories/Sub-categories:  
47A (Marine Engineering)  
85G (Marine & Waterway Transportation)

PB2008114337

NOAA Coral Reef Conservation Program. Roadmap for the Future. A Plan for Developing CRCP Direction through 2015  
Department of Commerce  
2008, 15 pages  
Related Categories/Sub-categories:  
47D (Biological Oceanography)  
48B (Natural Resource Management)  
57H (Ecology)  
70F (Public Administration & Government)

## Category: 72

### Mathematical Sciences

ADA471819

Fast Randomized Algorithm for the Approximation of Matrices  
Department of Defense  
2007, 43 pages  
Related Categories/Sub-categories:  
72B (Algebra, Analysis, Geometry, & Mathematical Logic)

ADA473001

Detection of Daytime Arctic Clouds using MISR and MODIS Data  
Department of Defense  
2006, 25 pages  
Related Categories/Sub-categories:  
63C (Infrared & Ultraviolet Detection)  
72F (Statistical Analysis)  
94K (Laboratory & Test Facility Design & Operation Clouds)

ADA474154

Perceptual Issues of Augmented and Virtual Environments  
Department of Defense  
2007, 25 pages  
Related Categories/Sub-categories:  
62B (Computer Software)  
72E (Operations Research)

ADA478920

Stochastic Stability of Regional Ocean Models with Uncertainty in Wind Forcing  
Department of Defense  
2007, 17 pages  
Related Categories/Sub-categories:  
47C (Physical & Chemical Oceanography)  
55C (Meteorological Data Collection, Analysis, & Weather Forecasting)  
72E (Operations Research)  
72F (Statistical Analysis)

ADA483298

Visual Analysis of North Atlantic Hurricane Trends Using Parallel Coordinates and Statistical Techniques  
Department of Defense  
2008, 21 pages  
Related Categories/Sub-categories:  
62B (Computer Software)  
72F (Statistical Analysis)  
95D (Human Factors Engineering)

**RSS Feeds Now Available** in your choice of NTIS Subject Category. For information go to <http://www.ntis.gov/rss/rssntiscategorylist.aspx> and look for the Category RSS Feeds button.



DE2008932877

Elements of a Function Analytic Approach to Probability

Department of Energy

2008, 48 pages

SAND2008-0963

Related Categories/Sub-categories:

72B (Algebra, Analysis, Geometry, & Mathematical Logic)

N20080023287

Arctic Sea Ice Variability and Trends, 1979-2006

National Aeronautics and Space Administration

2008, 30 pages

Related Categories/Sub-categories:

47 (Ocean Sciences & Technology)

47B (Dynamic Oceanography)

55C (Meteorological Data Collection,

Analysis, & Weather Forecasting)

72F (Statistical Analysis)

PB2008102339

Effects of 'Math Pathways and Pitfalls' on Students' Mathematics Achievement

National Science Foundation

2007, 85 pages

Related Categories/Sub-categories:

43C (Human Resources)

92D (Education, Law, & Humanities)

PB2008106243

Standards for Statistical Surveys for Producing and Disseminating Survey Estimates in the U.S. Statistical System

Department of Labor

2008, 9 pages

Related Categories/Sub-categories:

43 (Problem Solving Information for State & Local Governments)

62 (Computers, Control & Information Theory)

70E (Research Program Administration & Technology Transfer)

72F (Statistical Analysis)

PB2008109341

Formulation and Solution of an Emergency Routing Problem

Department of Transportation

2008, 29 pages

Related Categories/Sub-categories:

43D (Police, Fire, & Emergency Services)

72B (Algebra, Analysis, Geometry, & Mathematical Logic)

91I (Emergency Services & Planning)

PB2008107393

Estimating Price Relatives for the U.S. Consumer Price Index When Priced Items are Reestratified

Department of Labor

2008, 6 pages

Related Categories/Sub-categories:

96 (Business & Economics)

96A (Domestic Commerce, Marketing, & Economics)

## Category: 99

### Chemistry

ADA477790

Effect of Teflon Emulsion on Hydrogen Electrode Properties and Performance in Nickel-Hydrogen Cells

Department of Defense

2008, 44 pages

Related Categories/Sub-categories:

49 (Electrotechnology)

97M (Batteries & Components)

99C (Polymer Chemistry)

ADA477942

Proteinated Subnano Particles of Elemental Selenium for the Treatment of Breast Cancer

Department of Defense

2007, 9 pages

Related Categories/Sub-categories:

57B (Biochemistry)

57F (Cytology, Genetics, & Molecular Biology)

57Q (Pharmacology & Pharmacological Chemistry)

99E (Photochemistry and Radiation Chemistry)

ADA478494

Atmospheric Transformation of Volatile Organic Compounds

Department of Defense

2008, 9 pages

Related Categories/Sub-categories:

55A (Aeronomy)

99D (Basic & Synthetic Chemistry)

ADA482626

Real-Time Detection of Trace Contaminants and Bio/Chemical Agents in ROWPU Processed Drinking Water Using Reagentless UV Laser-Induced-Fluorescence

Department of Defense

2007, 12 pages

Related Categories/Sub-categories:

46C (Optics & Lasers)

74D (Chemical, Biological, & Radiological Warfare)

99E (Photochemistry and Radiation Chemistry)

99F (Physical & Theoretical Chemistry)

DE2008924507

Background X-Ray Spectrum of Radioactive Samples

Department of Energy

2008, 3 pages

INL/CON-08-13770

Related Categories/Sub-categories:

77B (Isotopes)

77G (Radioactive Wastes & Radioactivity)

99A (Analytical Chemistry)

DE2008921676

Spent Nuclear Storage Basin Water Chemistry: Electrochemical Evaluation of Aluminum Corrosion

Department of Energy

2008, 7 pages

Related Categories/Sub-categories:

77I (Reactor Fuels & Fuel Processing)

77G (Radioactive Wastes & Radioactivity)

99F (Physical & Theoretical Chemistry)

PB2008107884

Method 1698: Steroids and Hormones in Water, Soil, Sediment, and Biosolids by HRGC/HRMS U.S. Environmental Protection Agency

2007, 69 pages

EPA/821/R-08-003

Related Categories/Sub-categories:

68C (Solid Wastes Pollution & Control)

68D (Water Pollution & Control)

99A (Analytical Chemistry)

PB2008109431

Carbon Dioxide Separation Technology: R and D Need for the Chemical and Petrochemical Industries

Department of Energy

2008, 147pages

Related Categories/Sub-categories:

41E (Manufacturing, Planning, Processing & Control)

41P (Research Program Administration & Technology Transfer)

70E (Research Program Administration & Technology)

99F (Physical & Theoretical Chemistry)

PB2008111693

Flammability of Polymer Composites

Department of Transportation

2008, 22 pages

DOT/FAA/AR-08/18

Related Categories/Sub-categories:

51C (Aircraft)

71F (Composite Materials)

71O (Plastics)

81A (Combustion & Ignition)

85D (Transportation Safety)

99C (Polymer Chemistry)

PB2008114162

Control of Ethanol Dehydration in the Supercritical Water Reforming of Ethanol into Hydrogen

Department of Transportation

2008, 13 pages

UTC-R166

Related Categories/Sub-categories:

97K (Fuels)

99F (Physical & Theoretical Chemistry)