

| | |
|---|-------|
| INTRODUCTION | XVIII |
| BCC ON-LINE SERVICES..... | XIX |
| ADVANCED MATERIALS..... | 1 |
| MEMBRANES LOG CONTINUED GROWTH | 1 |
| MEMBRANES LOG CONTINUED GROWTH (CONTINUED) | 2 |
| MEMBRANES LOG CONTINUED GROWTH (CONTINUED) | 3 |
| IT'S JUST A FAST SWITCH..... | 4 |
| TABLE 1 MARKET APPLICATIONS OF SWITCHABLE MATERIALS, THROUGH 2006 (\$ MILLIONS)..... | 5 |
| MORE APPLICATIONS FOR STRUCTURAL CARBON..... | 5 |
| MORE APPLICATIONS FOR STRUCTURAL CARBON (CONTINUED)..... | 6 |
| TABLE 2 NORTH AMERICAN MARKET FOR ADVANCED STRUCTURAL CARBON, THROUGH 2007 (\$ MILLIONS)..... | 7 |
| ANI DEMONSTRATES 14-IN.- DIAGONAL NANOTUBE DISPLAY | 7 |
| SHAPE-MEMORY PLASTIC CAN TIE KNOTS..... | 8 |
| BROAD APPLICATIONS FOR IRON POWDERS..... | 9 |
| BROAD APPLICATIONS FOR IRON POWDERS (CONTINUED)..... | 10 |
| TABLE 3 U.S. MARKET FOR IRON-BASED AND IRON OXIDE POWDERS, THROUGH 2006 (\$ MILLIONS)..... | 11 |
| METAL-METAL COMPOSITES ROBUST, HIGHLY SELECTIVE | 11 |
| ADVANCED CERAMICS MARKET DECLINES | 12 |
| TABLE 4 U.S. MARKETS FOR ADVANCED CERAMIC COMPONENTS, THROUGH 2006 (\$ MILLIONS)..... | 13 |
| MIECs REDUCE HYDROGEN COST..... | 13 |
| DIAMOND COATINGS FINDING APPLICATIONS | 14 |
| TABLE 5 SHARE OF U.S. PATENTS IN DIAMOND FILMS/COATINGS ISSUED, 1992, 1996, AND 2001 (%)..... | 15 |
| CHINA TAKES THE LEAD IN MAGNETIC MATERIALS | 16 |
| TABLE 6 MAGNETIC MATERIALS IN CHINA: CURRENT SALES AND FORECAST, THROUGH 2007 (\$ MILLIONS)..... | 17 |
| GETTING OUT THE SMALL STUFF..... | 17 |
| TABLE 7 U.S. MARKET FOR ULTRAFILTRATION, THROUGH 2007 (\$ MILLIONS)..... | 18 |
| FILTERING OUT A GROWTH MARKET..... | 19 |
| TABLE 8 GROWTH FOR NONWOVEN FILTER MEDIA, THROUGH 2007 (\$ MILLIONS)..... | 20 |
| RECORD FOR AMSC WIRE | 20 |
| RECORD FOR AMSC WIRE (CONTINUED)..... | 21 |
| APPLIANCES | 22 |
| MIDDLE ATLANTIC REPORT 2001..... | 22 |
| MIDDLE ATLANTIC REPORT 2001 (CONTINUED) | 23 |
| MIDDLE ATLANTIC REPORT 2001 (CONTINUED) | 24 |
| BIOTECHNOLOGY AND MEDICINE..... | 25 |

| | |
|---|----|
| SEQUENCING MACHINES WORKING OVERTIME | 25 |
| SEQUENCING MACHINES WORKING OVERTIME (CONTINUED)..... | 26 |
| SEQUENCING MACHINES WORKING OVERTIME (CONTINUED)..... | 27 |
| SEQUENCING MACHINES WORKING OVERTIME (CONTINUED)..... | 28 |
| SEQUENCING MACHINES WORKING OVERTIME (CONTINUED)..... | 29 |
| AIMING TO THWART DRUG RESISTANCE | 30 |
| TABLE 9 MARKET FOR ANTIBIOTICS, THROUGH 2006 (\$ MILLIONS)..... | 31 |
| CONSORTIUM FORMED TO FIGHT FLAVIVIRUS..... | 31 |
| CONSORTIUM FORMED TO FIGHT FLAVIVIRUS (CONTINUED)..... | 32 |
| FDA APPROVED 16 BIOLOGICALS IN 2001..... | 33 |
| VACCINE FOR HAY FEVER..... | 33 |
| TAPPING INTO THE BABY BOOMERS..... | 34 |
| TAPPING INTO THE BABY BOOMERS (CONTINUED)..... | 35 |
| TABLE 10 U.S. VALUE OF THE AGING BABY SALES, THROUGH 2006 (\$ MILLIONS AT MANUFACTURERS' LEVEL)..... | 36 |
| MIGHTY-MICE DON'T GET FAT | 36 |
| MIGHTY-MICE DON'T GET FAT (CONTINUED)..... | 37 |
| WAR ON CANCER REDUX..... | 38 |
| WHEN THE DOCTOR DOES A TEST | 38 |
| TABLE 11 U.S. MDK APPLICATIONS MARKET, THROUGH 2006 (\$ MILLIONS) | 39 |
| ENGINEERED CELL "PHARMACY" OPENS..... | 40 |
| PHENSERINE REDUCES ALZHEIMER'S PLAQUES | 41 |
| PHENSERINE REDUCES ALZHEIMER'S PLAQUES (CONTINUED)..... | 42 |
| NO ECONOMIES OF SCALE..... | 43 |
| STEM CELLS MAY TREAT LIVER FAILURE | 44 |
| BIOWRECK CONTINUES ON WALL STREET..... | 45 |
| BIOWRECK CONTINUES ON WALL STREET (CONTINUED) | 46 |
| NANOSTRUCTURED SURFACES FOR BIO-IMPLANTS..... | 47 |
| WE'RE MORE LIKE A FLY THAN A WORM | 48 |
| NANOTECH, BIOTECH CONVERGE IN CT..... | 49 |
| NANOTECH, BIOTECH CONVERGE IN CT (CONTINUED) | 50 |
| NANOTECH, BIOTECH CONVERGE IN CT (CONTINUED) | 51 |
| NANOTECH, BIOTECH CONVERGE IN CT (CONTINUED) | 52 |
| DON'T SNEEZE AT ALLERGY MEDICATIONS..... | 53 |
| TABLE 12 U.S. PRESCRIPTION ALLERGY PRODUCTS, THROUGH 2006 (\$ BILLIONS)..... | 54 |
| AMERICANS WILL PAY FOR GENETIC TESTS | 54 |
| AMERICANS WILL PAY FOR GENETIC TESTS (CONTINUED)..... | 55 |

| | |
|--|----|
| TESTING FOR DRUGS OF ABUSE..... | 56 |
| TABLE 13 U.S. AND EUROPEAN DRUGS AND ABUSE TESTING, THROUGH 2007 (\$ MILLIONS)..... | 57 |
| SAN FRANCISCO BAY STILL LEADS BIOTECH | 57 |
| DRUGMAKERS TARGET INHIBITORS, BLOCKERS..... | 58 |
| TABLE 14 WORLDWIDE MARKET FOR INHIBITORS AND BLOCKERS, THORUGH 2006 (\$ MILLIONS)..... | 59 |
| TINY VIRUSES EQUAL MAJOR DRUG MARKET..... | 59 |
| TABLE 15 GLOBAL MARKET FOR PRESCRIPTION ANTIVIRAL DRUGS, THROUGH 2006 (\$ MILLIONS)..... | 60 |
| DENDRIMERS FORM ARTIFICIAL ANTIBODIES..... | 60 |
| DENDRIMERS FORM ARTIFICIAL ANTIBODIES (CONTINUED)..... | 61 |
| PHARMACEUTICALS KEEP UP THE PACE..... | 62 |
| REPORT FINDINGS | 62 |
| REPORT FINDINGS (CONTINUED)..... | 63 |
| TABLE 16 TRENDS IN DRUG SALES, THROUGH 2007 (\$ BILLIONS) | 64 |
| APROTININ MADE IN PLANTS | 64 |
| DIABETES TREATMENT TO TOP \$26 BILLION BY 2007..... | 65 |
| TABLE 17 WORLDWIDE DIABETES MARKET, THROUGH 2007 (\$ MILLIONS)..... | 66 |
| ISLET TRANSPLANTS FREE PATIENTS FROM INSULIN | 66 |
| NEW VISTAS IN MEDICAL IMAGING | 67 |
| NEW VISTAS IN MEDICAL IMAGING (CONTINUED)..... | 68 |
| TABLE 18 EXPENDITURES FOR MEDICAL IMAGING EQUIPMENT, THROUGH 2007 (\$ MILLIONS)..... | 69 |
| U.S. INITIATES TRIALS OF HEART REGENERATION | 69 |
| EMBRYONIC RESEARCH AT A SLOW CRAWL | 70 |
| CELLS HOLD PROMISE FOR ORTHOPEDICS..... | 71 |
| INERT INGREDIENTS? BIG PROFITS..... | 72 |
| INERT INGREDIENTS? BIG PROFITS (CONTINUED)..... | 73 |
| TABLE 19 GLOBAL MARKET FOR PHARMACEUTICAL (DRUG) INERT INGREDIENTS, THROUGH 2006 (MILLIONS OF KG)..... | 74 |
| IS NICOTINE A WONDER DRUG? | 74 |
| IS NICOTINE A WONDER DRUG? (CONTINUED)..... | 75 |
| NITINOL DEVICE DOES HEAVY LIFTING | 76 |
| NITINOL DEVICE DOES HEAVY LIFTING (CONTINUED)..... | 77 |
| CHEMICALS AND PLASTICS..... | 78 |
| PUMPING PLASTICS INTO VEHICLES..... | 78 |
| TABLE 20 AUTOMOTIVE EXTERIOR PLASTICS MARKET, THROUGH 2006 (MILLION POUNDS)..... | 79 |
| HIGH ENERGY MAGNET DEVELOPED | 79 |
| EUROPE SEEKS NIGHT WEAR STANDARD..... | 80 |
| STICK WITH SPECIALTY ADHESIVES..... | 81 |
| TABLE 21 SALES OF SPECIALTY ADHESIVES, THROUGH 2006 (\$ MILLIONS)..... | 82 |
| SEARCH TO REPLACE HALON CONTINUES..... | 82 |
| SEARCH TO REPLACE HALON CONTINUES (CONTINUED) | 83 |

| | |
|--|------------|
| MORE RESIN FOR ELECTRONIC PARTS..... | 84 |
| <i>TABLE 22 RESIN CONSUMPTION IN ELECTRONIC COMPONENTS, THROUGH 2006 (MILLION LBS.).....</i> | <i>85</i> |
| SOL-GEL PRODUCTS SLATED FOR GROWTH..... | 85 |
| SOL-GEL PRODUCTS SLATED FOR GROWTH (CONTINUED)..... | 86 |
| <i>TABLE 23 MARKETS FOR SOL-GEL PRODUCTS, THROUGH 2006 (\$ MILLIONS).....</i> | <i>87</i> |
| REINFORCED PLASTICS SHOW STRONG GROWTH..... | 87 |
| <i>TABLE 24 FIBER-REINFORCED PLASTICS MARKET, THROUGH 2007 (MILLION LBS.).....</i> | <i>88</i> |
| EXPANSION IN ASIA'S PETROCHEMICAL SECTOR | 89 |
| <i>TABLE 25 ASIA-PACIFIC: PETROCHEMICAL DEMAND, THROUGH 2007.....</i> | <i>90</i> |
| HALON USE PROJECTED FOR DECADES TO COME | 90 |
| HALON USE PROJECTED FOR DECADES TO COME (CONTINUED)..... | 91 |
| FR MARKET CONTINUES MODEST SALES REBOUND | 92 |
| FR LEADERS CONTINUE SERIES OF PRICE HIKES..... | 93 |
| WHAT MAKES THE OIL PATCH GO ROUND?..... | 94 |
| WHAT MAKES THE OIL PATCH GO ROUND? (CONTINUED) | 95 |
| <i>TABLE 26 OILFIELD PROCESS CHEMICALS BY APPLICATION, THROUGH 2007 (\$ MILLIONS).....</i> | <i>96</i> |
| MORE REAGENTS FOR SEPARATIONS | 96 |
| <i>TABLE 27 EXPENDITURE FOR CHROMATOGRAPHY REAGENTS, THROUGH 2007 (\$ MILLIONS).....</i> | <i>97</i> |
| ECONOMIC OUTLOOK | 98 |
| RECYCLING VITAL TO ECONOMY, STUDY SAYS..... | 98 |
| BUSH BUDGETS FOR BIOTERROR MEASURES | 99 |
| BUDGET CALLS FOR MORE PROTECTION | 100 |
| BUDGET CALLS FOR MORE PROTECTION (CONTINUED) | 101 |
| CHEMICALS ARE STILL THE BELLWETHER..... | 102 |
| CHEMICALS ARE STILL THE BELLWETHER (CONTINUED) | 103 |
| TRACKING EFFICIENCY TAX INCENTIVES..... | 104 |
| STRONG R&D SPENDING BUTTRESSES ECONOMIC GROWTH..... | 104 |
| STRONG R&D SPENDING BUTTRESSES ECONOMIC GROWTH (CONTINUED)..... | 105 |
| DESPITE OBSTACLES, BIOTECH MARCHES ON..... | 106 |
| DESPITE OBSTACLES, BIOTECH MARCHES ON (CONTINUED)..... | 107 |
| FEAR BOOSTS FIRE TRUCK MARKET..... | 108 |
| THE CHEMISTS SEE BETTER DAYS AHEAD..... | 109 |
| <i>TABLE 28 ECONOMIC INDICATORS, 1999-2003F (% CHANGE).....</i> | <i>109</i> |
| THE CHEMISTS SEE BETTER DAYS AHEAD (CONTINUED) | 110 |
| STATES CALL FOR MARKET-BASED CLIMATE RULES | 111 |
| DOES DRUG INDUSTRY NEED ANOTHER MERGER?..... | 111 |

| | |
|---|-----|
| DOES DRUG INDUSTRY NEED ANOTHER MERGER? (CONTINUED)..... | 112 |
| ENGINEERING AND LIFE SCIENCES CONVERGING..... | 113 |
| CHANGE URGED FOR BUSH STEM CELL POLICY | 114 |
| IS U.S. BEING OUTSPENT TWO TO ONE ON NANO? | 114 |
| IS U.S. BEING OUTSPENT TWO TO ONE ON NANO? (CONTINUED)..... | 115 |
| ECA: "COMPONENT INDEX FLAT" | 116 |
| THE LATEST TRENDS FOR THE NEW YEAR..... | 116 |
| 2003 AGRIBUSINESS IS A REPEAT OF 2002 | 117 |
| 2003 AGRIBUSINESS IS A REPEAT OF 2002 (CONTINUED) | 118 |
| ELECTRONICS | 119 |
| DISPLAY TECHNOLOGY CONTINUES ADVANCING | 119 |
| CATHODE RAY TUBES..... | 119 |
| LIQUID CRYSTAL DISPLAYS | 119 |
| PLASMA PANELS..... | 119 |
| ELECTROLUMINESCENT | 120 |
| FIELD EMISSION | 120 |
| MICRODISPLAYS | 120 |
| PROJECTION DISPLAYS..... | 120 |
| OLED TECHNOLOGY | 120 |
| <i>TABLE 29 PROJECTED SHIPMENTS OF CRT AND FLAT PANEL DISPLAYS, THROUGH 2006 (\$ MILLIONS)</i> | 121 |
| DISPLAY WILL SOON BE EVERYWHERE | 122 |
| <i>TABLE 30 WORLDWIDE VALUE OF ELECTRONIC DISPLAYS, THROUGH 2006 (\$ MILLIONS)</i> | 123 |
| INDUSTRIAL SENSORS GO BIG TIME | 123 |
| INDUSTRIAL SENSORS GO BIG TIME (CONTINUED)..... | 124 |
| <i>TABLE 31 SENSOR TECHNOLOGIES, THROUGH 2006 (\$ MILLIONS)</i> | 125 |
| CHEMICALS AND PLASTICS LOTS OF FROTH IN POLYMER FOAMS..... | 125 |
| <i>TABLE 32 U.S. MARKETS FOR POLYMERIC FOAM, THROUGH 2006 (MILLION LBS.)</i> | 126 |
| IT'S ADDITIVES THAT MAKE THE DIFFERENCE | 126 |
| IT'S ADDITIVES THAT MAKE THE DIFFERENCE (CONTINUED)..... | 127 |
| <i>TABLE 33 EUROPEAN MARKETS FOR PLASTICS ADDITIVES, THROUGH 2006 (THOUSANDS OF TONS)</i> | 128 |
| PHOTONIC ICs COME OF AGE | 128 |
| <i>TABLE 34 GROWTH OF PHOTONIC INTEGRATED CIRCUIT SUBSYSTEM AND COMPONENTS MARKET, THROUGH 2006 (\$ MILLIONS)</i> | 129 |
| VOLUME PRODUCTION OF 3-D OPTICAL SWITCH | 129 |
| BROADBAND VIDEO TAKES OFF | 130 |
| BROADBAND VIDEO TAKES OFF (CONTINUED)..... | 131 |
| <i>TABLE 35 U.S. BROADBAND VIDEO EQUIPMENT AND SERVICES, THROUGH 2006 (\$ MILLIONS)</i> | 132 |

| | |
|---|-----|
| YOU'LL ALWAYS KNOW WHERE YOU ARE - GPS | 132 |
| TABLE 36 THE GLOBAL END-USER GPS MARKET, THROUGH 2006 (\$ BILLIONS) | 133 |
| LCD ADVANCES ARE KEY TO TV, MONITOR MARKETS | 133 |
| TABLE 37 VALUE OF LCD SHIPMENTS FOR DIRECT VIEW TELEVISION AND DESKTOP MONITORS, THROUGH 2006 (\$ MILLIONS)..... | 134 |
| AN EMPHASIS ON SECURITY | 135 |
| TABLE 38 SALES AND FORECASTS FOR ELECTRONIC SURVEILLANCE AND MONITORING SYSTEMS, THROUGH 2006 (\$ BILLIONS)..... | 136 |
| FLAT PANEL DISPLAYS LEAD OPTOELECTRONICS FOR 2001 | 137 |
| TABLE 39 FASTEST SELLING OPTOELECTRONICS COMPONENT MARKETS (%) | 138 |
| KEEPING E-BIZ SAFE FROM HARM..... | 138 |
| TABLE 40 WORLDWIDE E-SECURITY REVENUE, THROUGH 2006 (\$ MILLIONS)..... | 139 |
| FLEXIBLE CIRCUITS GO MAINSTREAM..... | 140 |
| TABLE 41 U.S. PRODUCTION OF FLEXIBLE CIRCUITS, THROUGH 2006 (\$ MILLIONS)..... | 141 |
| NEXT-GENERATION ELECTRONIC MATERIALS | 141 |
| DLP ATTAINS 76% MARKET SHARE | 142 |
| TABLE 42 VALUE OF PROJECTION DISPLAY SHIPMENTS, THROUGH 2006 (\$ MILLIONS)..... | 143 |
| E INK FROM B/W TO COLOR | 144 |
| E INK FROM B/W TO COLOR (CONTINUED) | 145 |
| E INK FROM B/W TO COLOR (CONTINUED)..... | 146 |
| ENERGY | 147 |
| PUMPING POWER INTO BATTERIES | 147 |
| PUMPING POWER INTO BATTERIES (CONTINUED) | 148 |
| FUEL CELLS START TO LOOK REAL..... | 149 |
| FUEL CELLS START TO LOOK REAL (CONTINUED) | 150 |
| FUEL CELLS START TO LOOK REAL (CONTINUED) | 151 |
| FUEL CELLS START TO LOOK REAL (CONTINUED) | 152 |
| NEW ENERGY'S UNITS CONCENTRATE PV..... | 153 |
| NEW ENERGY'S UNITS CONCENTRATE PV..... | 153 |
| COMPOSITE FLYWHEEL PROMISES FASTER SPEEDS | 154 |
| MANURE + PAPER = ELECTRICITY | 155 |
| WHAT'S IN THE BUSH BUDGET? | 156 |
| CORPORATE PLAYERS POWER WIND ENERGY..... | 157 |
| SOLAR PLANTS SURPASS EXPECTATIONS | 158 |
| NEW HYBRID SOLAR CELLS..... | 159 |
| NEW HYBRID SOLAR CELLS (CONTINUED) | 160 |
| RAYOVAC CLAIMS 75% MARKET SHARE | 161 |
| GAO SAYS TVA NOT USING DSM OPTIMALLY | 162 |
| BIGGER BATTERIES, LARGER FUEL CELLS | 163 |
| TABLE 43 U.S. LARGE SIZE BATTERY AND LARGE FUEL CELL MATERIALS MARKET, THROUGH 2006 (\$ MILLIONS)..... | 164 |
| SOLAR POWER FROM NANOMATERIALS..... | 165 |
| DOE GRANTS \$9 MILLION FOR DG INDUSTRY STUDIES | 166 |
| MICROTURBINE SHIPMENTS LOWER THAN EXPECTED..... | 167 |

| | |
|--|------------|
| SAVINGS FROM SENATE ENERGY LEGISLATION | 168 |
| POWER PRICES A MIXED BAG FOR CUSTOMERS | 169 |
| WIND OFFERS BEST OPPORTUNITY..... | 170 |
| A LOOK AT THE BUS MARKET | 171 |
| WHY ARE UTILITIES PULLING OUT OF EUROPE? | 172 |
| FUEL CELLS, BATTERIES POWER UP | 173 |
| <i>TABLE 44 U.S. SMALL AND PORTABLE BATTERY AND FUEL CELL MATERIAL</i> | |
| <i>MARKET, THROUGH 2003 (\$ MILLIONS).....</i> | <i>174</i> |
| FUEL CELLS TO TOP \$46 BILLION BY 2011 | 175 |
| LITHIUM AIMS FOR 100 MILLION A MONTH | 176 |
| LITHIUM AIMS FOR 100 MILLION A MONTH (CONTINUED) ... | 177 |
| SOLAR CELLS START TO SHINE | 178 |
| <i>TABLE 45 WORLDWIDE PHOTOVOLTAIC MARKET, THROUGH 2006</i> | <i>179</i> |
| SURVEY UPDATES COMPUTER DATA | 179 |
| MGB ₂ SUPERCONDUCTS AT A BALMY 39 KELVIN..... | 180 |
| MGB ₂ SUPERCONDUCTS AT A BALMY 39 KELVIN | |
| (CONTINUED)..... | 181 |
| MGB ₂ SUPERCONDUCTS AT A BALMY 39 KELVIN | |
| (CONTINUED)..... | 182 |
| MGB ₂ SUPERCONDUCTS AT A BALMY 39 KELVIN | |
| (CONTINUED)..... | 183 |
| COMPUTING THE HEDGE VALUE OF WIND POWER..... | 184 |
| POTENTIAL OF METHANE HYDRATES | 184 |
| POTENTIAL OF METHANE HYDRATES (CONTINUED) | 185 |
| HARD TIMES FORCE OUT GOING CONCERNS..... | 186 |
| HARD TIMES FORCE OUT GOING CONCERNS | |
| (CONTINUED)..... | 187 |
| HARD TIMES FORCE OUT GOING CONCERNS | |
| (CONTINUED)..... | 188 |
| STATE POLICIES IMPACT CHP INSTALLATIONS | 189 |
| HOMEOWNERS INTERESTED IN ON-SITE GENERATION | 190 |
| STATES LEAD IN CLEAN ENERGY | 191 |
| THE USE OF SUBORDINATED DEBT TO FINANCE A WIND | |
| PROJECT IN PENNSYLVANIA..... | 192 |
| BUY-DOWN PROGRAMS FOR PHOTOVOLTAIC SYSTEMS | |
| IN CALIFORNIA, PENNSYLVANIA, AND | |
| MASSACHUSETTS | 192 |
| BIOGAS PROJECTS IN CALIFORNIA AND WISCONSIN | 192 |
| MASSACHUSETTS' GREEN BUILDING PROGRAM..... | 192 |
| WISCONSIN'S USE OF PROGRAM EVALUATION..... | 192 |
| FUEL FROM THE OCEAN DEPTHS | 193 |
| FUEL FROM THE OCEAN DEPTHS (CONTINUED) | 194 |
| FUEL FROM THE OCEAN DEPTHS (CONTINUED) | 195 |
| <i>TABLE 46 WORLD EXPLORATION & DEVELOPMENT SPENDING, THROUGH 2006</i> | |
| <i>(\$ BILLIONS).....</i> | <i>196</i> |

| | |
|--|---------|
| NO SAVINGS FROM TIME OF DAY USAGE..... | 196 |
| THE POWER TO THE ROOF | 196 |
| WINDOWS, CAULK WON'T CUT HEAT COSTS | 197 |
| EVERGREEN, NREL WORK ON STRING RIBBON CELLS | 198 |
| ELIMINATING "PERVERSE" REGULATORY BARRIERS | 199 |
| GETTING MORE FROM CORN..... | 200 |
| \$37/KW MATERIALS COST POSSIBLE | 201 |
| \$37/KW MATERIALS COST POSSIBLE (CONTINUED)..... | 202 |
| ENVIRONMENT | 203 |
| WASTE TREATMENT MUDDLES ALONG | 203 |
| STUDY MAY BREAK BOTTLE IMPASSE | 204 |
| CAN CHINA CLEAN IT'S ENVIRONMENT? | 205 |
| TABLE 47 CHINESE MARKET FOR POLLUTION CONTROL PRODUCTS AND EQUIPMENT, THROUGH 2006 (\$ BILLIONS)..... | 206 |
| BIOTECH'S ROLE IN WASTE MANAGEMENT | 207 |
| TABLE 48 WORLDWIDE SALES FOR U.S. MANUFACTURERS OF ENVIRONMENTAL BIOTECHNOLOGY PRODUCTS FOR WASTE TREATMENT, THROUGH 2006 (\$ MILLIONS)..... | 208 |
| TREATING THE WORLD'S WASTE WATER..... | 208 |
| TABLE 49 VALUE OF ADVANCED WASTEWATER TREATMENTS BY GLOBAL REGION, THROUGH 2006 (\$ MILLIONS)..... | 209 |
| THE ROLE OF CLEAN COAL..... | 209 |
| THE ROLE OF CLEAN COAL (CONTINUED) | 210 |
| TABLE 50 AIR POLLUTION CONTROL FOR COAL-FIRED POWER PLANTS, THROUGH 2006 (\$ MILLIONS)..... | 211 |
| 21ST-CENTURY RAIN MAKERS: TURBINES..... | 211 |
| WATER EVERYWHERE... AND BIG PROFITS TO MAKE | 212 |
| TABLE 51 U.S. VALUE OF WATER TREATMENT FOR RESIDENTIAL, BOTTLED WATER AND COMMERCIAL ICE MAKING, THROUGH 2006 (\$ MILLIONS)..... | 213 |
| MEMBRANES OFFER CLEANER WATER OPTIONS | 214 |
| MEMBRANES OFFER CLEANER WATER OPTIONS (CONTINUED)..... | 215 |
| FERMENTED WASTEWATER CHEAP HYDROGEN SOURCE..... | 216 |
| STUDY EYES OCEAN AS POTABLE SOURCE | 217 |
| WASTE VOLUME FALLING, REVENUES ARE RISING..... | 217 |
| WASTE VOLUME FALLING, REVENUES ARE RISING (CONTINUED)..... | 218 |
| TABLE 52 COMMERCIAL HAZARDOUS WASTE CONTAINMENT AND DISPOSITION MARKETS, THROUGH 2007 (\$ MILLIONS, THOUSANDS OF TONS)..... | 219 |
| SOFTWARE MONITORS SECURITY THREATS | 219 |
| WATER SHIPPING NOT YET IN THE BAG | 220 |
| WATER RECLAMATION GROWS IN IMPORTANCE..... | 221 |
| RADWASTE CLEANUP COOLS OFF..... | 222 |
| TABLE 53 U.S. MARKET FOR RADIOACTIVE WASTE-MANAGEMENT TECHNOLOGIES AND SERVICES, THROUGH 2007 (\$ MILLIONS)..... | 223 |

| | |
|---|-----|
| RECYCLING GLASS, SLAG IS SIGNIFICANT | 223 |
| RADIOACTIVE SERVICES MARKET TO DECLINE..... | 224 |
| RADIOACTIVE SERVICES MARKET TO DECLINE (CONTINUED)..... | 225 |
| FOOD AND AGRICULTURE | 226 |
| HERBALISTS ADVISE CAUTION ON KAVA | 226 |
| HERBALISTS ADVISE CAUTION ON KAVA (CONTINUED) | 227 |
| DESPITE CONTROVERSY, GM FOODS ARE GROWING | 228 |
| <i>TABLE 54 SALES AND PROJECTIONS OF ALTERED CROPS, FOOD PRODUCTS, AND INGREDIENTS CURRENTLY MARKETED, BY TRAIT, THROUGH 2006 (\$ BILLIONS)</i> | 229 |
| DEA BACKS UP ON HEMP FOOD BAN..... | 230 |
| “MEDICAL FOODS” UNDER DEVELOPMENT | 231 |
| RICE DRAFT GENOMIC SEQUENCES PUBLISHED | 232 |
| THERE’S MORE TO FEED THAN HAY..... | 233 |
| <i>TABLE 55 MARKET FOR COMPOUND FEED PRODUCTION, THROUGH 2006 (MILLIONS OF TONS)</i> | 234 |
| PROCESS HALTS FOOD CONTAMINANT | 235 |
| SUGAR FREE, OTHERS HOT IN CANDY INDUSTRY | 236 |
| CHINA FLAVOR MARKET SOARS | 236 |
| A FEAST OF FOOD ADDITIVES | 237 |
| <i>TABLE 56 U.S. MARKET FOR FOOD ADDITIVES, THROUGH 2006 (\$ MILLIONS)</i> | 238 |
| HEART ASSN. WEIGHS IN ON FAKE FATS..... | 238 |
| WORLD BANK ENTERS GM FRAY | 239 |
| CORN USE IS BOON FOR FARMERS | 240 |
| BIG DEMAND FOR CITRIC ACID | 241 |
| <i>TABLE 57 MARKET FOR ISOASCORBIC ACID, ASCORBIC ACID AND CITRIC ACID, THROUGH 2007 (\$ MILLIONS)</i> | 242 |
| CANADA PROPOSES IRRADIATION CHANGES | 243 |
| MARKETING KEY TO DIABETIC FOODS..... | 243 |
| MARKETING KEY TO DIABETIC FOODS (CONTINUED) | 244 |
| HEALTHCARE | 245 |
| A BRIGHT SPOT IN A WORLD OF WOES - THE YEAR PAST, THE YEAR AHEAD | 245 |
| A BRIGHT SPOT ... YEAR AHEAD (CONTINUED)..... | 246 |
| INFORMATION TECHNOLOGY..... | 247 |
| TECHNOLOGY TRANSFORMS RETAIL BANKING..... | 247 |
| <i>TABLE 58 RETAIL BANKING SOLUTION MARKET, THROUGH 2006 (\$ BILLIONS)</i> | 248 |
| THE NETWORK’S NEXT GENERATION | 248 |
| THE NETWORK’S NEXT GENERATION (CONTINUED)..... | 249 |
| <i>TABLE 59 U.S. MARKET FOR NEXT-GENERATION NETWORKS, THROUGH 2007 (\$ MILLIONS)</i> | 250 |
| MANUFACTURING..... | 251 |

| | |
|--|---------|
| THE WAREHOUSE OF THE FUTURE | 251 |
| TABLE 60 <i>MARKETS FOR WAREHOUSE MANAGEMENT SYSTEMS, THROUGH</i> <i>2006 (\$ MILLIONS)</i> | 252 |
| THERE'S STILL PROFITS IN WELDING..... | 252 |
| THERE'S STILL PROFITS IN WELDING (CONTINUED) | 253 |
| TABLE 61 <i>NORTH AMERICAN METAL WELDING EQUIPMENT MARKET,</i> <i>THROUGH 2007* (\$ MILLIONS)</i> | 254 |
| THE GLOW IN SPUTTERING TARGETS..... | 254 |
| TABLE 62 <i>WORLD MARKETS FOR SPUTTERED TARGETS, THROUGH 2006</i> | 255 |
| SUITING UP FOR SAFETY..... | 256 |
| TABLE 63 <i>U.S. PROTECTIVE CLOTHING MARKET, THROUGH 2006 (\$ MILLIONS)</i> | 257 |
| MICRO/NANOTECHNOLOGY | 258 |
| THE WORLD OF "TINY" DEVICES HAS ARRIVED..... | 258 |
| MEMS..... | 258 |
| OTHER MEMS HAPPENINGS | 259 |
| NANOTECHNOLOGY OVERVIEW | 260 |
| TABLE 64 <i>VALUE OF MEMS SHIPMENTS, THROUGH 2006 (\$ MILLIONS)</i> | 261 |
| TABLE 65 <i>CAPITAL INVESTED IN NANOTECHNOLOGY, 2000 AND 2001</i> | 261 |
| ENGINES FOR GROWTH | 262 |
| ENGINES FOR GROWTH (CONTINUED)..... | 263 |
| ENGINES FOR GROWTH (CONTINUED)..... | 264 |
| NANOWIRE COULD BECOME A PRODUCT | 265 |
| MONEY FOR NANO IS INVESTMENT IN FUTURE | 266 |
| TABLE 66 <i>ALLOCATION OF FEDERAL NANOTECHNOLOGY FUNDING FOR 2003</i> | 267 |
| THE GLOBAL RACE IS UNDERWAY..... | 267 |
| TABLE 67 <i>PROJECTED EUROPEAN GOVERNMENT SPENDING ON NANOTECH</i> <i>R&D</i> | 267 |
| U.S. COMMITTED TO SMALL THINGS..... | 267 |
| STRIPED NANOWIRES MIGHT ENABLE NEXT-GEN TRANSISTORS..... | 268 |
| STRIPED NANOWIRES ... TRANSISTORS (CONTINUED) | 269 |
| ELECTRONIC DESIGN PLAYS ROLE IN MICRO MARKET | 270 |
| NANOHYPE REACHES MEGA LEVELS..... | 271 |
| NANOHYPE REACHES MEGA LEVELS (CONTINUED) | 272 |
| FRANCE PROMOTES NANOTECH | 273 |
| NANOMAGNETICS SETS STORAGE DENSITY RECORD | 274 |
| RESTORING SIGHT WITH RETINAL IMPLANTS | 275 |
| RESTORING SIGHT WITH RETINAL IMPLANTS (CONTINUED)..... | 276 |
| NANOBOTS COULD SENSE DANGER AT SEA..... | 277 |
| CHINA ESTABLISHES NANOTECHNOLOGY CENTER | 278 |
| SENATORS INTRODUCE BILL TO PROMOTE NANOTECH R&D | 279 |
| NANO READY TO MOVE, SAYS U.K. SURVEY | 280 |
| MANUFACTURING METHODS ARE STILL EVOLVING | 281 |
| THE MINISCULE IS GETTING BIGGER..... | 282 |

| | |
|---|-----|
| THE MINISCULE IS GETTING BIGGER (CONTINUED) | 283 |
| TABLE 68 SALES OF MEMS/MST PRODUCTS, THROUGH 2007 (MILLIONS)..... | 284 |
| METAL MICROMACHINING FOR ROBUST DEVICES | 285 |
| METAL MICROMACHINING FOR ROBUST DEVICES (CONTINUED)..... | 286 |
| NOVEL DESIGN PAVES THE WAY TO NANOELECTRONICS | 287 |
| NOVEL DESIGN PAVES THE WAY TO NANOELECTRONICS (CONTINUED)..... | 288 |
| SEMICONDUCTORS..... | 289 |
| ELECTRONIC MATERIALS LEAD THE WAY..... | 289 |
| ELEMENTAL SEMICONDUCTORS..... | 289 |
| COMPOUND SEMICONDUCTORS | 290 |
| CONDUCTORS/DIELECTRICS..... | 291 |
| PROCESS CHEMICALS AND GASES..... | 292 |
| ELECTRONIC POLYMERS | 292 |
| ELECTRONICS INDICATORS REMAIN GLOOMY..... | 293 |
| THE BIRTH OF THE BROADBAND AGE | 294 |
| TABLE 69 BROADBAND SEMICONDUCTORS, THROUGH 2006 (\$ MILLIONS) | 295 |
| ULTRA-BROADBAND IC LASER A FIRST | 295 |
| INDUSTRY'S SMALLEST TRANSISTORS | 296 |
| INDUSTRY'S SMALLEST TRANSISTORS (CONTINUED)..... | 297 |
| SMALL IONS, BIG GROWTH | 298 |
| TABLE 70 VALUE OF WORLDWIDE ION IMPLANTATION AND MBE INDUSTRIES - EQUIPMENT, SERVICES AND MATERIALS, THROUGH 2006 (\$ MILLIONS)..... | 299 |
| NEW CHIPS, NEW APPLICATIONS..... | 299 |
| HIGHLIGHTS FROM THE REPORT | 300 |
| TABLE 71 WORLDWIDE SEMICONDUCTOR SALES, THROUGH 2006 (\$ BILLIONS)..... | 300 |
| SEMI REPORTS ON Q1 WAFER SHIPMENTS..... | 301 |
| COMPONENT ORDERS' GROWTH SLOWS | 301 |
| MID-YEAR IC FORECAST | 302 |
| TABLE 72 WORLD MARKETS FOR SEMICONDUCTORS, THROUGH 2005 (\$ BILLIONS)..... | 303 |
| FLEXIBLE CIRCUITS FIT RIGHT IN..... | 303 |
| WHEN YOUR COMPUTER ANSWERS YOUR CALL..... | 304 |
| TABLE 73 WORLDWIDE VOICE RECOGNITION SALES, THROUGH 2007 (\$ MILLIONS)..... | 305 |
| HOLIDAY SEASON HOT FOR LARGE TVs | 306 |
| HOLIDAY SEASON HOT FOR LARGE TVs (CONTINUED)..... | 307 |
| TEXTILES..... | 308 |
| COTTON MAY BREAK INTO CARPET MARKET | 308 |
| COTTON MAY BREAK INTO CARPET MARKET (CONTINUED)..... | 309 |
| TRANSPORTATION | 310 |

| | |
|--|-----|
| HAS EVERYTHING CHANGED FOR ITS?..... | 310 |
| HAS EVERYTHING CHANGED FOR ITS? (CONTINUED) | 311 |
| HAS EVERYTHING CHANGED FOR ITS? (CONTINUED) | 312 |
| HAS EVERYTHING CHANGED FOR ITS? (CONTINUED) | 313 |
| LA LOOKS AT ITS CONGESTION | 314 |
| DELPHI EXTENDS OFFICE INTO CAR | 314 |
| HYBRIDS SAIL WITH GAS..... | 315 |
| DIGITAL CAR BREAKS NEW GROUND..... | 316 |
| WHERE IS THE VALUE IN TELEMATICS? | 316 |
| WHERE IS THE VALUE IN TELEMATICS? (CONTINUED)..... | 317 |
| COMPONENT COST KEY TO ROLLING FUTURE..... | 318 |
| COMPONENT COST KEY TO ROLLING FUTURE (CONTINUED)..... | 319 |
| NHTSA REPORTS ON DUAL-FUEL VEHICLES..... | 320 |
| NHTSA REPORTS ON DUAL-FUEL VEHICLES (CONTINUED)..... | 321 |
| LONG ROAD FOR FUEL CELL VEHICLES..... | 322 |
| BUS BONANZA PARKED IN COMMITTEE..... | 323 |
| ANALYSIS: CAFE NOT COST-EFFECTIVE..... | 324 |
| ANALYSIS: CAFE NOT COST-EFFECTIVE (CONTINUED) | 325 |
| METHANOL STATION STARTS PUMPING | 326 |
| GM STUDIES FUEL CELL VEHICLES | 326 |
| GM STUDIES FUEL CELL VEHICLES (CONTINUED)..... | 327 |
| PROJECT 54 MAKES PROGRESS | 328 |
| INSURERS BACK MONITORING | 329 |
| BUS, NOT RAIL, IS URBAN SOLUTION..... | 330 |
| TRACKED IF BY LAND OR SEA..... | 330 |
| “SUPERCAR” ACHIEVES 99 MPG WITH BIODIESEL..... | 331 |
| COMPANIES RACE TO MARKET | 332 |
| COMPANIES RACE TO MARKET (CONTINUED) | 333 |
| CAN VOLVO BUCK THE TREND?..... | 334 |
| DRIVERS ASSISTED HANDS-FREE | 335 |
| SMART WINDOWS SENSE OBSTACLES | 336 |
| VEHICLE ANTICIPATES IMMINENT IMPACT..... | 337 |