Nanoshuttles driven by biological motors
Opportunities for microtechnology in ion channel research
Insulating dielectrophoresis for the continuous separation and concentration of bacillus subtilis
Multi-DNA extraction chip based on an aluminum oxide membrane integrated into a PDMS microfluidic structure
Continuous plasma separation from whole blood using microchannel geometry
Improving DNA microarray hybridization with a pulsed source-sink mixing device
Microfabricated fluorescence-activated cell sorter with hydrodynamic flow manipulation
Dual capillary electrophoresis devices with electrochemical detection on a single platform
Lab on a chip systems with three dimensional microelectrodes
Open environment micro device for integration of patch clamp instrumentation with targeted microfluidic chemical delivery
Influence of oxygen microenvironment on microfluidic glucose sensor performance
Automated multiplexed multidensity microfluidic (M3) cell sensing based on electrical gain measurements
A PDMS microfluidic spotter for fabrication of lipid microarrays
A microfluidic assembly line for adherent cell assays
Microfluidic blood/plasma separation unit based on microchannel bend structures
High throughput microfluidic system for heterogeneous assays
MEMS ultrasonic ejector array for electrospray mass spectrometry of biomolecules
Flat-chip microanalytical enzyme sensor for salivary amylase activity
Electrophoretic immunoassays for oral diagnostics
Development of miniaturized in situ analysis devices for biological and chemical oceanography
MEMS-based biochip for the characterization of single red blood cell
Polymer based microfluidic system for surface plasmon resonance biosensor
High-throughput microfluidic devices for no assay based on electrophoretic separation
Detection of a cardiac infarct on a disposable lab on a chip device
Optical measurements on drain fluid for the detection of anastomotic leakage
A MEMS RF-interrogated biosensor
Traveling wave bio-agent concentrator
Dynamic surface modification and patterning using electrochemistry and molecular assembly approach
Movable microprobes for the brain
Tactile display for 2-D and 3-D shape expression using SMA micro actuators
A miniaturized low power personal motion analysis logger utilizing MEMS accelerometers and low power microcontroller
Implantable CMOS-based stimulator/reader design for retinal prosthesis
Tissue micromotion induced stress around brain implants
A retinal neuroprosthesis design based on simultaneous current injection
Power efficient multiple voltage stimulation for implantable retinal prosthesis
Augmenting real-time DSP in implantable high-density neuroprosthetic devices  p. 108
A three-dimensional microassembly structure for micromachined planar microelectrode arrays  p. 112
Implantable parylene MEMS for glaucoma therapy  p. 116
Computer simulation of eddy current loss reduction for rechargeable cardiac pacemaker  p. 120
Investigation of multi-sensor techniques for cardiac-output measurements in intensive care  p. 122
Low-pressure treatment control of glaucoma using an electromagnetic valve actuator with a piezoresistive pressure sensor  p. 126
Development of a small wireless position and bleeding detection sensor  p. 130
Implantable, transcutaneously powered neurostimulator system to restore gastrointestinal motility  p. 132
Design optimization of integer lifting DWT circuitry for implantable neuroprosthetics  p. 136
Application of a novel widefield surface plasmon microscope in binding assays  p. 140
Fabrication and test of a submicroliter-level thermopneumatic micropump  p. 143
A low power, polyimide valved micropump for precision drug delivery  p. 146
Fabrication of multilayered particles with structured, complex three-dimensional architecture  p. 150
Ligand-conjugated quantum dots for targeted drug delivery to nerve cells  p. 152
Focused ultrasonic device for sonodynamic therapy in the human body  p. 154
Spatially controlled sonoporation of prostate cancer cells via ultrasound activated microbubble caviation  p. 158
Ultra high speed observations of a cavitation derived microjetting phenomenon  p. 160
Protein encapsulated magnetic carriers for micro/nanoscale drug delivery systems  p. 162
Piezoelectric 2D microscanner for precise laser treatment in the human body  p. 166
125um diameter fiber-optic pressure sensor system using spectrometer-based white light interferometry with high-speed wavelength tracking  p. 170
Biological insight into future technology : what living cells tell us  p. 174
Lab-on-a-chip devices for cell biology studies  p. 175
Pattern formation of adhesive beads to channels in microfluidic devices for cell culture  p. 176
Indium tin oxide electrodes for cell-based biosensors  p. 180
Co-culture of cells in PDMS microsystem for sensitized artificial skin  p. 184
Cellular responses to nanotopology of polymeric surfaces fabricated with AAO nanoimprinting  p. 188
Control of human skin cell adhesion, proliferation and migration by microengineered substrata : transposition from solid phase to clinically relevant materials  p. 190
Surface engineering of microfluidic systems for cellular biochips  p. 194
Cytoskeletal networks in an epithelial sheet : mechanical characterization using composite diaphragm inflation  p. 198
Monitoring capillary endothelial cell culture and capillary formation in a microdevice by impedance spectroscopy measurements  p. 201
Electrophoretic control of actomyosin motility  p. 205
Planar off-chip microelectrode for the electrophysiological measurement of small biological cells  p. 207

Evaluation of micromotion of vascular endothelial cells with estrogen in electrical cell-substrate impedance sensing (ECIS) method using a mathematical model p. 211

Tripodal thiol-derivatives as a functional interface monolayer for immobilization of biomolecules p. 215

Direct detection of single-base extension reaction using genetic field effect transistor p. 219

Micro/nanotechnologies for heart failure : improving quality of life p. 223

Ultra small reaction chamber array for single-molecule studies of biological reaction p. 224

A single-cell electroporation array for efficient intracellular delivery p. 225

Miniaturized ECL detection system for glucose biosensor p. 229

Three-dimensionally patterned cardiomyocytes with high activity for powering bio-hybrid microdevices p. 233

Fabrication of nano-patterned substrates using nano-imprint lithography p. 237

A scale-up prototype of PZT thin-film actuators for scanning endoscopes p. 241

Small diameter hydraulic active bending catheter using laser processed super elastic alloy and silicone rubber tube p. 245

Active bending ileus tube using shape memory alloy for treatment of intestinal obstruction p. 249

Fundamental design rules for the conception of microdevices to be propelled in the blood circulatory system through magnetic gradients generated by a clinical MRI system p. 253

Nano-fluidic interconnects within a multilayer microfluidic chip for attomolar biochemical analysis and molecular manipulation p. 257

Control techniques of kinesin-driven beads in microfluidic devices p. 260

Microfluidic packaging of suspended microchannel resonators for biomolecular detection p. 264

A dynamic vapor control system for nanovolume chemistry and protein crystallization p. 268

Formation process of planar lipid bilayer observed by confocal microscopy p. 272

A magnetohydrodynamic (MHD) microfluidic platform for cell sorting p. 276

Particle mixing and concentration through competing electrokinetic and hydrodynamic flows p. 280

Quantifying viscoelastic behavior of DNA-laden flows in microfluidic systems p. 282

Magnetizable intravascular stents for sequestration of systemically circulating magnetic nano- and microspheres p. 286

A microfluidic model of microbubble lodging in small arteriole bifurcations p. 290

Effects of surface roughness on the flow characteristics in PDMS microchannels p. 292

Progress in R&D on wearable and implantable biomedical sensors for better healthcare and medicine p. 296

The integration of bio, micro and nano technologies to produce medical implants p. 299

Mechanically robust micro-fabricated strain gauges for use on bones p. 302

Lithography combined with multilayer nanosassembly : versatile approach to fabricate nanocomposite micropatterns for biointerfaces p. 305
Micromachined tacks for retinal implant applications p. 309
Characterization of micromanipulator controlled dry spinning of micro- and nanoscale polymer fibers p. 312
Aligning system for the in-situ microfabrication of multiple microstructures p. 315
MRI velocimetry in microchannel networks p. 319
Novel technological process to manufacture ceramic microelectrodes for biomedical applications implying microextrusion p. 323
Design and fabrication of a multianalyte-capable optical biosensor using a multiphysics approach p. 326
Effects of alginate, hyaluronic acid and high voltage electrostatic field on the fibrillogenesis of collagen II p. 329
Direct immobilization and patterning of hyaluronic acid on hydrophilic substrates p. 331
Integrated photonic crystal waveguides for mic-bioanalytical devices p. 333
Wireless wearable biomonitors for lifetime wellness optimization p. 337
Intrinsic optical signal imaging of a ratiometric fluorescence oxygen nanosensor p. 339
Development of a platform for microscale monitoring of cell function and differentiation p. 343
Forward-looking ultrasound imager using convex shape 1-3 composite transducer for intravascular treatment p. 345
Improved and simple sealing of microfluidic structures p. 349
Modeling and simulation of DNA flow in a microfluidic-based pathogen detection system p. 353
Particle simulation of traveling wave gel electrophoresis p. 356
Microanalytical technologies to monitor cellular signaling p. 360
Screening cellular responses to cytokine pulses in a microfluidic device p. 361
New polymer packaging for planar patch-clamp p. 363
Micro-3D cell culture devices for single cell analysis p. 365
Elastomer-based raised lateral patch clamp array p. 368
Electrophysiological biosensor with micro channel array for multipoint measurement of signals from distributed cells p. 371

Table of Contents provided by Blackwell's Book Services and R.R. Bowker. Used with permission.