

University of Colorado Chemicals & Materials Pipeline

Technology	Applications	Inventor	Case #	Concept	Proof of Principle	Applications Identified	Prototype	Feasibility Analysis
New High Through-put Desalination Membrane	Water treatment, sanitation and desalination	Douglas Gin	CU1642B*					
Lyotropic Liquid Crystal Nanofiltration Membranes	Commercial separations processes	Gin-Noble	CU1012B*					
Borosilicalite Molecular Sieve Membranes	Selectivity properties of membranes	Noble-Falconer	1998.9055B					
Zeolite Silicalite-I Membrane	Highly selective separation of vapor/gas and gas/gas mixtures	Noble-Falconer	1994.FD269B					
Ceramic Superconductor	Easier formation of macroscopic-scale devices	Veeraraghavan Badri	1996.7047B					
Eutectic Melt Catalyst/Scavenger Fluidized Bed Process using Low-temperature Molten Salts	Purification of emissions from plants and factories	Al Weimer	1998.9010B*					
Photopolymerization of polymer microparticles using compressed antisolvents	Bulk production of highly cross-linked polymeric microparticles	Theodore Randolph	1998.9020B					
Zeolite Membranes for Hydrogen Storage	Reversible, high energy density hydrogen storage	Richard Noble	CU1804B*					
Room-Temperature Ionic Liquids and Amines for the Capture and Sequestration of Carbon Dioxide	Carbon capture/sequestration	Douglas Gin	CU2040B*					
Photopolymerization Techniques for Polymeric Devices	Desired functionality for numerous applications	Christopher Bowman	CU1293B					
Controllable Nanometer-sized Valve	Separations, chemical sensors, and controlled release of molecules	Richard Noble	CU1724B*					
Stress Relaxation in Crosslinked Polymers	Molding, eliminate shrinkage stress, optical and dental applications	Christopher Bowman	CU1370B					
Polymer-Brush Fillers	Dental composites, implants	Jeffery Stansbury	CU1205H*					
Photopolymerizations of Degradable Thiol-ene Polymers	Complete temporal and spatial control of polymerization	Anseth-Bowman	2001.028B*					
Compressed CO2 for Polymer Particle Morphology Retention	Microparticle formation using the (PCA) technique	Theodore Randolph	9019B					
Protein-resistant Polymers for use in Membrane Bioreactors	Improvement of existing commercial UF membranes	Douglas Gin	CU1923B					
Crystal Habit Modification During Precipitation with a Compressed-Fluid Antisolvent	Compounds with enhanced powder flow properties; modified drug dissolution rates of chemicals	Theodore Randolph	CU1260B					
Photodegradable Groups for Tunable Polymeric Materials	Tissue engineering, drug delivery, materials processing, recycling, and lithography.	Kristi Anseth	CU1389B*					
Non-aqueous Nanoporous Gelled Ionic Polymer Electrolyte with High Lithium Ion Conductivity	Improved lithium ion batteries	Douglas Gin	CU1982B*					
Improved Zeolite Molecular Sieve Membranes	Highly selective separation	Falconer-Noble-George	6035B					
New Materials for Shape Memory Polymers	Biomedical devices	Christopher Bowman	CU2001B*					
Atomic Layer Controlled Growth of SiO2 Films at Room Temp.	Optical fiber communication, protective coatings, future silicon microelectronic devices	Steven George	7054B					
Alkylated Deltamedral Boranes as Liphophilic Anions	Substituted and derivatized polyhedral borate and carbonate anions and radicals	Josef Michl	IR441B					
Method for Removal of Carbonyl Sulfide from Liquefied Petroleum Gas	Fuel processing method	Anthony Lagalante	9007B*					
Room-Temperature Ionic Liquids (RTILs)	Non-evaporating solvents formed from bicontinuous cubic LLC phases with RTILs	Gin-Noble	CU1585B					
Nanogel Structures	New compositions and processing conditions	Jeffery Stansbury	CU1230H					
Synthesis of Bulk Left-Handed Materials with Response in the Visible	High resolution optical sensors, imaging devices, photolithography tools, advanced lense systems.	Josef Michl	CU1791B					
High Density, Vertically-Aligned Carbon Nanotube Membranes	Separation of liquid and gas mixtures	Noble-Falconer	CU2046B					

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University of Colorado Electronics Pipeline

Technology	Applications	Inventor	Case #	Concept	Proof of Principle	Applications Identified	Prototype	Feasibility Analysis
High Frequency Tunable Band Pass Filter	Military and civilian: see through fog, clouds, smoke; track plane in severe weather	Zbigniew Celinski	CU1141C					
FShm: Efficient Pipeline Parallelism for High-rate Networking	Pipeline Parallelism: Network frame processing, multimedia decoding, certain pointer chasing loops	Manish Vacharajani	CU1794B					
Non-Linear Carrier Controllers for High Power Factor Rectification	High power factor rectification	Maksimovic & Erickson	1993.IR367B					
Lightweight, Low-Power UV Ozone Photometer	UV absorption measurement of ozone	Linnea Avallone	CU2059B					
Polarization Switching D/A Converter	New hardware architecture performs digital-to-analog conversions	T.S. Kalkur	CU1271C					
Ordering and Rate/Power Allocation via Finite Bit Feedback	Wireless communications	Mahesh Varanasi	CU1555B					
New Optimal Constellation for Noncoherent MIMO Communications at Low SNR	SNR optimization in wide-band and ultrawide-band channels	Mahesh Varanasi	CU1707B					
Adaptive Voltage Regulator for Digital VLSI Processors	Efficient power management	Sandeep Dhar	2002.051B					
Digital Controller for High-Frequency Switching Power Supplies	DC-DC converters	Dragan Maksimovic	2002.062B					
Predictive Digital Current Controllers for Power Switching Converters	Digital current programmed control	Dragan Maksimovic	2002.075B					
Strobe-Calibrated Delay-Line A/D Converter	Voltage measurement; low-power, high-speed analog-to-digital converters.	Dragan Maksimovic	2002.088B					
Sensorless Optimization of Dead-times in Switched-mode DC-DC Converters	DC-DC converters	Dragan Maksimovic	CU1320B					
Digital Pulse Width Modulator w/Feed Forward Compensation	Voltage regulation of a switched-mode voltage regulator	Dragan Maksimovic	CU1334B					
Differential Delay-Line A/D Converter	Overload protection, current-mode control, current sharing, power sensing	Dragan Maksimovic	CU1335B					
Digital Current Mode Controller for DC-DC converters	Power electronics, power management	Hao Peng	CU1336B					
Capacitive Coupling to Aid Ignition in Discharge Lamps	Discharge lamp ignition	Regan Zane	CU1337B					
Masterless Multiphase Architecture for DC-DC Converters	Digitally controlled DC-DC converter phases, voltage and current mode control	Regan Zane	CU1352B					
Method for Operating Parallel Discharge Lamps	Discharge lamps	Regan Zane	CU1364B					
Architecture and Algorithms for Driving Multiple LEDs	Lighting including backlighting in LCD TV and general lighting	Regan Zane	CU1781B					
Determining Turbulence and Turbulent Mixing in the Free Atmosphere	Atmosphere observation: weather prediction	Lakshmi Kantha	CU1756B					
Enhanced Critical Current Density in Thallium Bismuth Superconductors	Superconducting materials, macro-scale devices	Allen Hermann	7047B					

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University of Colorado Cleantech/Energy Pipeline

Technology	Applications	Inventor	Case #	Concept	Proof of Principle	Applications Identified	Prototype	Feasibility Analysis
High Throughput Desalination Membrane	Water treatment and sanitation	Noble-Gin	CU1642B*					
Low Temperature Molten Salts	Purifies emissions from plants and factories	Al Weimer	1998.9010B*					
Polymer Derived Ceramic Materials for Battery Applications	Improved lithium ion batteries	Rishi Raj	CU2043B					
Room-Temperature Ionic Liquids and Amines	Carbon capture/sequestration	Noble-Gin	CU2040B*					
Reversible, High Energy Density H2 Storage Using Zeolite Layers	Reversible, high energy density hydrogen storage	Falconer-Noble	CU1804B*					
Controllable Nanometer-sized Valve	Hydrogen storage, separations, chemical sensors, controlled release of molecules	Falconer-Noble	CU1724B*					
Fuel Powered Portable LED Lantern	Emergency or off-grid light source	Jim Stevens	CU1606C					
Non-aqueous Nanoporous Gelled Ionic Polymer Electrolyte with High Lithium Ion Conductivity	Improved lithium ion batteries	Douglas Gin	CU1982B*					
Method for Removal of Carbonyl Sulfide from Liquefied Petroleum Gas	Fuel processing method	Anthony Lagalante	9007B*					

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University of Colorado Optics and Nanotech Pipeline

Technology	Applications	Inventor	Case #	Concept	Proof of Principle	Applications Identified	Prototype	Feasibility Analysis
Ultra-wide, Low-light Level Viewing System	Military, security personnel, and police use in after dark operations	Kenneth Kubala	8076B					
Passive Optical Imaging and Ranging	Military ranging systems, reality games, space optics, robotics	Rafael Piestun	CUI744B					
Configurable Photonic Crystals	Real-time, dynamic control of photonic band structure	Wounjhang Park	2002.065B					
Highly Sensitive, Massively Parallel, Broad-Bandwidth, Real-Time Spectroscopy	Determining gas/chemical concentrations	Jun Ye	CUI541B/10035B					
Hybrid Integrated Photonics	Optical packaging methods, circuit fabrication systems	Robert Mcleod	CUI269B					
Speed and Range Detector	Robotics, law enforcement	Eric Cornell	IR435B					
Sub-15 Femtosecond Active Synchronization of Passively Mode-locked Ti-Sapphire Oscillators	High performance multistage synchronization of pulsed radiation sources	Kapteyn/Murnane	2001.061B					

Technology	Applications	Inventor	Case #	Concept	Proof of Principle	Applications Identified	Prototype	Feasibility Analysis
Low Cost High Tech Micro Diesel Glow Plug	Specialized engines: diesel, natural gas, engines that burn pulverized coal	Rishi Raj	2002.037B					
Molecular-Sized Nets and Scaffolding	Formation of forming molecular-sized grids or nets	Josef Michl	1994.IR451B					
New Class of Photoresists	Production of semiconductor devices	Josef Michl	1999.10086B					
Self-assembling RNA nanotubes	Nanofiltration, nano-molecular pump, drug delivery	Jeff Kieft	CUI862H*					

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University of Colorado Software Pipeline

Technology	Applications	Inventor	Case #	Concept	Proof of Principle	Applications Identified	Prototype	Feasibility Analysis
BIO/HEALTHCARE INFORMATICS								
Nurse-Family Partnership Program Model	Visiting nurse program for new mothers	David Olds	CU1888H					
Dynamic Reconstruction of Coronary Vascular Trees and Quantitative Analysis	Clinical procedures involving vascular implants and bypass procedures	Carroll-Chen	2002.080H					
ePHocus Patient Survey Software	HIPAA compliant patient survey	Dennis Lezotte	CU1583H					
Integrated Health Connect	Point of care information access	Wilson Pace	CU1703H					
Automated Drug Identification Project	Providing poison control information	Alvin Bronstein	DHHA1006H					
SOFTWARE (GENERAL)								
HATCH- High Accuracy Atmospheric Correction for Hyperspectral Data	Remote sensing: weather prediction, environmental protection, national sec.	Zheng Qu	2001.062B					
The CLEAR Speech Corpora	Research and development and evaluation of spoken dialogue systems	Wayne Ward	2002.024B					
Power and Reservoir System Model Version 3.0 (Riverware)	River basin modeling and simulation	Edith Zagona	7063B					
The Sonic Large Vocabulary Continuous Speech Recognizer	Speech recognition	Bryan Pellom	CU1015B					
VORPAL, a Versatile Plasma Simulation Code	Plasma simulation	John Cary	CU1094B					
Secure Information Sharing using Attribute Certificates and Role-Based Access Control	Network information security	C. Edward Chow	CU1496C					
Colorado Assessment Tests for Cognitive and Neuropsychological Assessment	Cognitive ability assessment	Hasker Davis	CU1511C					
BioNet: Developer-centric Middleware Architecture	Software for integrating heterogeneous wireless networks	Kevin Gifford	CU1519B					
AGF (Alternative Growth Futures) Impact Evaluation Software	Land use planning, urban planning	Brian Muller	CU1520D					
Integrated Near-Space Vehicle Performance-Analysis Method/Tool	Long-duration operation of flight vehicles	David Schmidt	CU1513C					
Speaker Identification: Method to Quantify or Code the Speaking Voice	Voice recognition: Speaker identification	Richard Sanders	CU1818D					
Genwits Search and Rescue System using Wireless Sensor Nodes	Search and rescue	Jyh Huang	CU1645B					
System for Identifying the Original Sender of an Email	Anti-spam systems	Dennis Heimbigner	CU1594B					
Mechanism for Enhanced TCP Splice	Remote or web-based desktop applications	Manish Marwah	CU1638B					

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University of Colorado Licensed Physical Sciences Technologies

Licensee	Product	Applications
MARKETED PRODUCTS		
2B Technologies Inc./ InDevR Inc.	Portable Ozone Monitor	Analytical instruments for atmospheric and environmental measurements
Advanced Thin Films LLC	Optical Reference System for Narrow Linewidth Lasers	Custom optics and thin film deposition services
AgentSheets, Inc.	Visual AGENTALK	Game authoring technology, educational simulation tools
CDM Optics Inc./ OmniVision Technologies	(multiple)	Enhanced performance of conventional optical systems
ColorLink/REAL D	Color Management Components, Polarization Optics and Optical Systems.	Next-gen 3-D cinema.
Displaytech, Inc.	(multiple)	Liquid crystal microdisplays for digital still cameras, camcorders, and personal communication products
Earth Decision Sciences Corp./Paradigm	Sidetrack Planning and Optimization, Proactive/Reactive Well Path Planning	Fully integrated shared-earth modeling for asset teams
Kapteyn-Murnane Labs	High Repetition Rate, High Average Power Ultrafast Laser Amplifier System	Power laser amplifier systems
Optical Associates (OAI)	Fabrication of 3D Photopolymeric Devices	Precision equipment for MEMS, semiconductors, nanotechnology, cleanroom automation, and UV light measurement.
Pearson Knowledge Technologies	Analysis and Evaluation of Semantic Content of Writing	Automated text analysis technologies and products for education and government markets
Propellant Fracturing and Simulation (PFS)	Method and Apparatus for Fracturing Wells Using Propellants	Safe, environmentally friendly and cost effective well stimulation solutions
Plato Learning, Inc.	The CSLR Conversational Agent Toolkit (CAT)	Instructional technology and educational software solutions
Rosetta Stone Ltd.	The Sonic Large Vocabulary Continuous Speech Recognizer	Language-learning software
Secure64 Software Corp.	Nonlinear Adaptive Control of Resource-Distribution Dynamics	Secure, self-protecting, high performing server applications

Licensee	Product	Applications
MARKETED PRODUCTS		
SFC Fluidics	Nonmechanical High Pressure Pump	Microfluidic technologies: lab-on-a-chip, analytical tools, clinical diagnostics and life science research instruments.
Sopris West/Cambium Learning	Educational Modules	Pre-K-12 curricula, targeted interventions, assessment, positive school climate resources, and professional services
TerraSpark IP, LLC	Automatic Fault Extraction	Visualization technology research and software applications development for energy and oil & gas markets.
Videodiscovery, Inc.	Interactive CD-ROM Program	Multimedia learning tools for science and math
PRODUCTS IN DEVELOPMENT		
3QMatrix, Inc.	Photopolymerizations of Degradable Thiol-ene Polymers	Wound healing and drug delivery systems
Securics, Inc.	Biotope™ Revocable Biometrics	Video surveillance, security systems
Peak Aging, Inc.	NeuroGuide Disease Management Software	Neuropsychological testing data entry
ALD NanoSolutions, Inc.	Insulating and functionalizing fine metal particles with conformal ultrathin films	Advanced materials
Meridian Water International, LLC.	Biological denitrification of water	Water treatment
SFC Fluidics	Disposable E-Pump	Microfluidic technologies: lab-on-a-chip, analytical tools, clinical diagnostics and life science research instruments.
LK Technologies II, Inc.	Continuous, Optically Transparent, Linear Electric Field Termination for Charged Particle Optics	Scientific instrumentation
Zenwa Corporation	High Resolution Polymer Endoscope	Medical imaging

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