

Shift-Free Gas Cell Atomic Clock A 360 degree portable lifting device A General-Purpose Parallel Read Functional Unit That Can Accelerate Software AES Encryption and Decryption A Gibbs Sampling Based MAP Detection Algorithm for OFDM Over Rapidly Varying Mobile Radio Channels A Hybrid Nanotube/CMOS Dynamically Reconfigurable Architecture and an Integrated Design Optimization Method and System Therefore A Method for Direction Imprinted of Microstructures in Materials A multiple-people MRI scanner that can simultaneously scan more than one person A New Design of Cache Memory in Computers that Improves Performance and Security A Photochemical Molecular Mask Strategy to Boost the Efficacy and Minimize Side Effects in Cisplatin Chemotherapy A scheme for Lossy Joint Source-Channel Coding at the Application Layer A Subfemtomoles Radio-Frequency Atomic Magnetometer for Nuclear Quadrupole Resonance Detection AI-2 Compounds and Analogs Based on Salmonella Typhimurium LsrB Structure Alkali Metal Hybrid Spin-Exchange Optical Pumping All-optical spiking neuron - an integrate-and-fire processing element Amine functionalization and specific binding of sub-10 nm Y2O3 nano-upconversion particles An Organic Photosensitive Optoelectronic Device Aneuploidy Prediction and Tumor Classification with Heterogeneous Hidden Conditional Random Fields Antagonist of Quorum-Sensing Receptor Controls Bacterial Pathogenicity Apparatus and method for converting energy of charged fusion products to electric potential energy Apparatus and method for separation of ions according to mass Approaches to influenza vaccine strain selection and vaccine design Architectures and Criteria for the Design of High Efficiency Organic Photovoltaic Cells Array Based Polymorphism Mapping at Single Nucleotide Resolution Automotive Body Panel Containing Thermally Exfoliated Graphite Oxide Barium-Doped Bond Coat for Thermal Barrier Coatings BioMems Force Spectroscopy Device for Cancer Detection Bis(ethylenediamine) Copper (II) as a swelling inhibitor for stone conservation Bridged Graphite Oxide Materials Carrier Applied Coating Layers Cationic Metal-Carbene Complexes Choice of Cell Type for Propagation of HCMV Controls its Mode of Entry and Interaction with Epithelial Cells Coaxial Multiturn Toroidal Field Coil Complexes for Form L2MX as Phosphorescent Dopants for Organic LEDs Composite Flash Precipitated Nanoparticles Compounds for the Modulation of PP2A and Methods of Use Compstatin Variants Conductive Ink Containing Thermally Exfoliated Graphite Oxide and Method of Making a Conductive Circuit Using the Same Conical Guide to Probe Microcircuits in the Brain with Microelectrodes Controlled growth of

# CELEBRATE

# PRINCETON

# INVENTION

Having Tunneling Barrier in Organic Matrix Intermediated Band Photosensitive Device with Quantum Dots Having Tunneling Barrier Embedded in Inorganic Matrix Intersystem Crossing Agents for Efficient Utilization of Excitons in Organic Light Emitting Devices Lamination as a modular approach for building organic and polymer solar cells Left-Handed Materials and Structures Based on Strong Dielectric Anisotropy Luminescent Compounds with Carbene Ligands Magnetic insulation to improve voltage holding in electrostatic accelerators Method for synchronizing the phase and frequency of two or more wireless transmissions Method and Apparatus for Detecting Surface and Subsurface Properties of Materials Method and Means for Tailored, Resilient, Runtime and Functional Attestation Method and System for Efficient Implementation of Boolean Satisfiability Method and System for Operating an Atomic Clock with Simultaneous Control of Frequency and Magnetic-Field Method for Eliminating Light Shift in Optical Pumping and Atomic Clocks Method for Enhanced Evanescent Field Exposure in an Optical Fiber Resonator for Spectroscopic Detection and Measurement of Trace Species Method for Filling of Nanoscale Holes and Trenches and for Planarizing of a Wafer Surface Method for Identification of Novel Physical Linkages of Genomic Sequences Method for Suppressing Light Shift in Optical Pumping Systems Method of Designing Photonic Heterostructures with Optimal Bandgap Properties for Arbitrary Symmetry and Arbitrary Long-range Translational Order Method of Fabricating an Optoelectron Device Having a Bulk Heterojunction Method of Fabricating an Optoelectronic Device Having a Bulk Heterojunction Method of preparing high density metal oxide layers and the layers produced thereby Methods for Apparatus for Enhanced Evanescent Field Exposure in an Optical Fiber Resonator for Spectroscopic Detection and Measurement of Trace Species Methods for Creating Discrete Nanopatterns on a Substrate Methods for Fabricating Large Area Nanoimprint Molds Methods for identifying genes which predict disease outcome for patients with colon cancer Methods for Measuring Protein Abundance in High Resolution Liquid Chromatography-Mass Spectrometry Data Methods for Predicting Disease Outcome for Patients with Colon Cancer Microfabricated Micropipette for High Throughput Parallel Patchclamp and Internal Perfusion MicroRNAs for Modulating herpes Virus Gene Expression Microscale Patterning and Articles formed thereby MiR-200 Family and miR194/192 cluster of miRNAs in cancer progression and metastasis Modular Monolayer Coatings for Selective Attachment of Nanoparticles to Biomolecules Multilayered Coatings for Use on Electronic Devices or other Articles Multi-Probe LSH: Efficient Indexing for High-Dimensional Similarity Search MURJ as the peptidoglycan lipid II flippase Nanochannel arrays and their preparation and use for high throughput macromolecular analysis Nano-Particle Surface Modification Nanoparticles for Photodynamic Therapy New Compstatin Variants Through Novel De Novo Protein Design Frameworks Applied to a Complex with Complement Component C3c Non-astigmatic x-ray imaging with matched pairs of spherically bent crystals Non-invasive device of measuring compounds and dissolved gasses in biological tissue using infrared absorption/reflection spectroscopy Non-invasive Device of Measuring Compounds and Dissolved Gasses in Biological Tissue Using Infrared Absorption/Reflection Spectroscopy Novel Inhibitors for HIV-1 gp41 Novel Metalloporphyrins and Related Metal Complexes for the Treatment of Oxidative Stress and Diseases with Oxidative Components Novel method for measuring chemical shrinkage Novel Organometallic Compounds for Use in Electroluminescent Devices OFDM Receiver Design in the Presence of High Mobility Fading Channels OLEDs Doped with Phosphorescent Compounds Optical Counter-Phase-Modulation Method of RF Interference Cancellation Optical Orthogonal Frequency-Division Multiplexing based on Spectral Filtering of a Coherent Frequency Comb Optical Resonator for Cavity Ring-Down Spectroscopy with Prism Retroreflectors Organi Light Emitting Materials with Anionic Ligand Organic Light Emitting Devices Having Carrier Blocking Layers Comprising Metal Complexes Organic light emitting devices with electron blocking layers Organic Light Emitting Materials with Anionic Ligand Organic Light-Emitting Device with a Phosphor-Sensitized Fluorescent Emission Layer Organic Photosensitive Devices Using Subphthalocyanine Compounds Organic Photosensitive Optoelectronic Device Having a Phenanthroline Exciton Blocking Layer Organic Photosensitive Optoelectronic Device With an Exciton Blocking Layer Organic Photosensitive Optoelectronic Devices Containing Tetra-Azaporphyrins Organic Photovoltaic Devices Organic Semiconductor Laser Organic Triodes with Novel Grid Structures and Method of Production Organometallic Complexes as Phosphorescent Emitters in Organic LEDs Organometallic Complexes as Phosphorescent Emitters in Organic LEDs Organometallic Compounds for Use in Electroluminescent Devices Packaging Material and Flexible Medical Tubing Containing Thermally Exfoliated Graphite Oxide Pantograph Gantry System PLASMA - Princeton Locomotive and Shop Management system Polarizing Nuclei in Solids via Spin Transfer From An Optically-Pumped Alkali Vapor Polymerization Method for Formation of Thermally Exfoliated Graphite Oxide Containing Polymer Porphyrin Catalysts and Methods of Use Thereof Powder Dropper PP2A & PME Printed Electronic Process and Apparatus for Organic Vapor Jet Deposition Process for Administering Distributed Academic Competitions Programmable Coil Array with Optimized Currents for Transcranial Magnetic Stimulation Protected Peptide Nanoparticles Quantum Cascade Wafer Testing Quantum Cascade Wafer Testing Using Intersubband Optical Absorption and Emission Spectroscopy Ratchet bump array Reduction of Minority Carrier Recombination at Silicon Surfaces and Contacts Using Organic Heterojunctions Rotationally Asymmetric Chaotic Optical Multi-Pass Cavity Security software and chip for DNA and Protein Synthesizers Sensor networks for cap and trade verification and greenhouse gas monitoring Separation Medium Containing Thermally Exfoliated Graphite Oxide Small RNAs and Bacterial Strains Involved in Quorum Sensing Sol-Gel Coated Polarization Vessels Soluble, Functional Apoptotic Protease-Activating Factor 1 Fragments Stacked Organic Photosensitive Devices Stretchable and Elastic Interconnects Structure of a Protein Phosphatase 2A Holoenzyme: Insights into Tau Dephosphorylation Supercapacitor and Battery Electrode Containing Thermally Exfoliated Graphite Oxide Supported Metal Catalyst With Improved Thermal Stability Synthesis of Bio-Functionalized Rare Earth Doped Upconverting Nanophosphors Synthesis of X-ray Excited Lanthanide Ions Doped Nanocrystals Via a Hydrothermal Approach System and method for a multi-modal, nano-to-macro, cyber-physical intelligent distributed system for computing, communication, and control (INTELLINET) System and method for nonlinear self-filtering via dynamical stochastic resonance System and Method for Pricing and Exchanging Content System and Method for Publishing Art on Social Networks System and method for multi-modal, nano-to-macro, cyber-physical intelligent distributed system for computing, communication, and control (INTELLINET) System and method for nonlinear self-filtering via dynamical stochastic resonance System and Method for Pricing and Exchanging Content System and Method for Publishing Art on Social Networks System and method for multi-modal communication, and control (INTELLINODE) Single Photon Source for Quantum Cryptography and Quantum Computing The Glider Coordinated Control System (GCCS) The Knowledge Gradient Algorithm with Correlated Beliefs for Efficient Exploration of Continuous Domains Tire Containing Thermally Exfoliated Graphite Oxide Toroidal Field Coil System for Tokamaks with Improved Access to the Core and Improved Confinement of the Plasma Inhibition of kynurenine production Structure of Protein Phosphatase 2A Core Enzyme Bound to Tumor-Induced Tumor Necrosis Factor- $\alpha$  Soluble Quantum Cascade Lasers Use of semiconductor optical amplifier as an integrator in analog optical computational neural systems for non-procedural learning and VLA4 as therapeutic targets for anti-tumor and anti-metastasis therapy Very High Efficiency Organic Light Emitting Devices Based on Electrophosphorescence Voltage Tunability of Quantum Cascade Lasers Wave-driven counter-current plasma centrifuge Wide-Area Network Acceleration for Developing-World Environments Wire Coating Containing Thermally Exfoliated Graphite Oxide and more

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# CELEBRATE PRINCETON INVENTION

## Agenda

**December 18, 2009**  
**Chancellor Green Rotunda**

**3 p.m.**

Hors d'Oeuvres and Networking

**4 p.m.**

Remarks

Shirley M. Tilghman  
President  
Princeton University

A. J. Stewart Smith  
Dean for Research  
Princeton University

**4:30–6 p.m.**

Networking and Exhibits

I am pleased to welcome you to the inaugural Celebrate Princeton Invention reception to honor the members of Princeton University's research community who contributed their talents, time, and energy to our invention process in the 2009 fiscal year.

More than 300 faculty members, research professionals, and students participated in vital research and technology transfer activities, ranging from initial disclosures and applications through the patenting and licensing of their discoveries. Their willingness to go above and beyond the call of duty allows Princeton to fulfill its role as one of the world's foremost research universities, transferring knowledge created here in our laboratories to the marketplace for public benefit.

Beyond celebrating these achievements, today's reception provides an opportunity for inventors from across campus to interact, discussing ideas and sharing best practices that will drive future innovation. I also want to express the University's gratitude to the investors and companies who are here today in support of Princeton's research mission. Your collaboration helps transform research into technological reality, and we hope the conversations you have today will not only nurture existing relationships, but launch exciting new partnerships for the future.

Thank you again for joining me as we congratulate and thank Princeton's talented inventors.

Enjoy the celebration.



John Ritter  
Director, Office of Technology Licensing

# Congratulations

Princeton's talented scientists and engineers not only aim to deepen our understanding of the world but also to make it a better place by carrying important discoveries out of the lab and into the public domain. In doing so, they come to grips with some of the most critical issues of the 21st century, including security, energy, and health. We are grateful for the deep expertise and dedication of these innovative scholars, who are strengthening our University, our nation's research enterprise, and society as a whole.

**Shirley M. Tilghman**  
President, Princeton University

When the University's world-class scholars convert new knowledge into useful technology, they carry forward a tradition that is critical to Princeton's research mission. As they seek to produce path-breaking discoveries that increase human knowledge and improve society's well-being, our scientists and engineers exemplify the values expressed in the University's informal motto, "Princeton in the nation's service and the service of all nations." Partnerships between Princeton researchers and colleagues from industry can reinvigorate existing research programs and launch new avenues of inquiry. These endeavors also provide superb opportunities to engage and challenge our students as we prepare them to be leaders in an increasingly complex world.

**Christopher L. Eisgruber**  
Provost, Princeton University

At Princeton, we have a wonderful group of science and engineering faculty working on fundamental problems for the joy of discovery, which is the way scientific discovery should be pursued. It is often the case that these academic investigations, driven by intellectual curiosity, yield results that have practical consequences and beneficial applications. In turn, these applications often help shape the future research agendas of individual faculty members at the University, granting them greater access to the knowledge frontier and a heightened ability to explore the territory.

**David P. Dobkin**  
Dean of the Faculty, Princeton University

Scientists and engineers searching for fundamental new knowledge provide the critical foundation for inventions and applications that improve human well-being and bolster the economy. The full realization of these benefits, however, hinges on vital collaborations with investors and corporations who, in spite of the inherent unpredictability and risks, are willing to nurture embryonic technologies and serve as a conduit to the marketplace. We are grateful to all who participate in these relationships and leverage the research taking place at Princeton.

**A. J. Stewart Smith**  
Dean for Research, Princeton University

# Special Recognition

## Edward C. Taylor

Inducted into the New Jersey Inventors Hall of Fame, October 2009

Recipient of the Alfred Burger Award in Medicinal Chemistry from the American Chemical Society (March 2010)

Inducted into the American Chemical Society Division of Medicinal Chemistry Hall of Fame (August 2010)

Inventor of the new cancer drug Alimta®

## Inventors

During FY 2009

A = Application P = Patent L = License D = Disclosure

### Abdel-Razzaq, Feras

Organometallic Complexes as Phosphorescent Emitters in Organic LEDs (A, P)

### Adachi, Chihaya

Organometallic Compounds and Emission-shifting Organic Electrophosphorescence (P)

### Adamovich, Vadim

Organometallic Compounds and Emission-shifting Organic Electrophosphorescence (P)

### Adamson, Douglas

Functional Graphene-Rubber Nanocomposites (L)  
Polymerization Method for Formation of Thermally Exfoliated Graphite Oxide Containing Polymer (A)

### Airoldi, Edoardo

Heterogeneous Hidden Conditional Random Fields (D)

### Aksay, Ilhan

Bridged Graphite Oxide Materials (A)  
Functional Graphene-Rubber Nanocomposites (L)  
Intellinode: Small-scale Intelligent Cyber-physical Device for Sensing, Multi-modal Communication, and Control (D)  
Intellinet: Multi-modal, Nano-to-macro, Cyber-physical Intelligent Distributed System for Computing, Communication, and Control (D)

### Arnold, Craig

A Tunable Acoustic Gradient Lens (A)

### Amodei, Dario

Microfabricated Micropipette for High Throughput Parallel Patchclamp and Internal Perfusion (D)

### Austin, Robert H.

Fractionation of Macro-molecules Using Asymmetric Pulsed Field Electrophoresis (A)  
Method for Continuous Particle Separation (L)

### Avaltroni, Michael

Carrier Applied Coating Layers (A, P)  
Enhanced Bonding Layers on Native Oxide Surfaces (P)  
Osteoblast Adhesion and Spreading on the Chemical Modified Surface (L)

### Avasthi, Sushobhan

Reduction of Minority Carrier Recombination at Silicon Surfaces and Contacts Using Organic Heterojunctions (A, D)

### Bacolod, Manny

Methods for Identifying Genes Which Predict Disease Outcome for Patients with Colon Cancer (D)

### Badam, Anirudh

HashCache: An Efficient Indexing Mechanism for Caching Filesystems (A)

**Bai, Shu-Feng**

Methods for Fabricating Large Area Nanoimprint Molds (D)

**Baldo, Marc A.**

Organic Triodes with Novel Grid Structures and Method of Production (A, P)  
Organometallic Complexes as Phosphorescent Emitters in Organic LEDs (P)  
Organometallic Compounds and Emission-shifting Organic Electrophosphorescence (P)

**Barton, Emily**

Conversion of Carbon Dioxide to Alcohols (L)  
Conversion of Carbon Dioxide to Alcohols using Visible Light (D)  
Electrochemical and Photoelectrochemical Conversion of Carbon Dioxide to Organic Products (A)

**Barutcuoglu, Zafer**

Heterogeneous Hidden Conditional Random Fields (D)

**Bassler, Bonnie**

AI-2 Compounds and Analogs Based on Salmonella typhimurium LsrB Structure (A, P)  
Small RNAs and Bacterial Strains Involved in Quorum Sensing (P)

**Belgacem, Bouzaiene-Ayari**

PLASMA—Princeton Locomotive and Shop Management System (D)

**Bell, Ronald**

High-throughput, High-accuracy-wavelength, Lens-based Imaging Spectrometer (D)

**Bellows, Meghan**

Compstatin Variants (D)  
New Compstatin Variants through Novel De Novo Protein Design Frameworks Applied to a Complex with Complement Component C3c (A)  
Novel Inhibitors for HIV-1 gp41 (D)

**Bentil, Ekua**

Quantum Cascade Wafer Testing (D)  
Quantum Cascade Wafer Testing Using Intersubband Optical Absorption and Emission Spectroscopy (A)

**Benziger, Jay B.**

Device and Method for Organic Vapor Jet Deposition (A, P)

**Bhattacharya, Rabin**

Deformable Organic Devices (P)

**Bitter, Manfred**

Non-astigmatic X-ray Imaging with Matched Pairs of Spherically Bent Crystals (D)

**Blanchard-Fillion, Beatrice**

Compounds for the Modulation of PP2A and Methods of Use (A)

**Bocarsly, Andrew**

A Photochemical Molecular Mask Strategy to Boost the Efficacy and Minimize Side Effects in Cisplatin Chemotherapy (D, A)  
Conversion of Carbon Dioxide to Alcohols (L)  
Conversion of Carbon Dioxide to Alcohols using Visible Light (D)  
Method of Preparing High Density Metal Oxide Layers and the Layers Produced Thereby (A)

**Botstein, David**

Array Based Polymorphism Mapping at Single Nucleotide Resolution (A)

**Brooks, Jason**

Cationic Metal-Carbene Complexes (P)  
Luminescent Compounds with Carbene Ligands (P)  
Organometallic Compounds for Use in Electroluminescent Devices (P)

**Brown, Cory**

Organometallic Compounds for Use in Electroluminescent Devices (P)

**Brown, Donald R.**

Method for Synchronizing the Phase and Frequency of Two or More Wireless Transmissions (A)

**Budijuno, Stephanie**

Nanoparticles for Photodynamic Therapy (A)

**Bulovic, Vladimir**

Organic Photosensitive Optoelectronic Devices Containing Tetra-Azaporphyrins (A)

**Burk, Diana**

Architectures and Criteria for the Design of High Efficiency Organic Photovoltaic Cells (A)

**Burrows, Paul E.**

Organometallic Complexes as Phosphorescent Emitters in Organic LEDs (A, P)  
OLEDs Doped with Phosphorescent Compounds (P)

**Calaprice, Frank**

Extraction of Argon and Helium Traces from an Underground Stream of Gas (A)

**Campagna, Shawn R.**

Al-2 Compounds and Analogs Based on Salmonella typhimurium LsrB Structure (A, P)

**Can, Peng**

Methods for Fabricating Large Area Nanoimprint Molds (D)

**Cao, Han**

Nanochannel Arrays and Their Preparation and Use for High Throughput Macromolecular Analysis (A)

**Carter, Emily**

Barium-doped Bond Coat for Thermal Barrier Coatings (A)  
Supported Metal Catalyst with Improved Thermal Stability (P)

**Chaikin, Paul M.**

Quasicrystalline Photonic Heterostructures (L)

**Champagne, David**

Method and Means for Tailored, Resilient, Runtime, and Functional Attestation (D)

**Charikar, Moses**

Multi-probe LSH: Efficient Indexing for High-dimensional Similarity Search (A, D)

**Chen, Chuan-Hua**

Printed Electronics (A)

**Chen, Hu-Yuan**

A General-purpose Parallel Read Functional Unit That Can Accelerate Software AES Encryption and Decryption (D)

**Chen, Ying**

Integrated Screening Assays and Methods of Use (A)

**Chen, Yu**

Structure of a Protein Phosphatase 2A Holoenzyme: Insights into Tau Dephosphorylation (A)

**Cheng, Yu-Wei**

Methods for Identifying Genes Which Predict Disease Outcome for Patients with Colon Cancer (D)

**Chiang, Katherine S.**

Printed Electronics (A)

**Chiang, Mung**

System and Method for Pricing and Exchanging Content (A)

**Chou, Stephen**

Electronic Detectors Inside Nanofluidic Channels for Detections, Analysis, and Manipulation of Molecules, Small Particles, and Small Materials (D)

Methods for Creating Discrete Nanopatterns on a Substrate (D)

Methods for Fabricating Large Area Nanoimprint Molds (D)

Microscale Patterning and Articles Formed Thereby (P)

Nanochannel Arrays and Their Preparation and Use for High Throughput Macromolecular Analysis (A)

**Cleveland, Carter A.**

System and Method for Publishing Art on Social Networks (A)

**Cox, Edward C.**

Integrated Screening Assays and Methods of Use (A)

**Crain, John**

Printed Electronics (A)

**D'Addio, Suzanne**

Protected Peptide Nanoparticles (A, D)

**Danahy, Michael P.**

Carrier Applied Coating Layers (A, P)

Enhanced Bonding Layers on Native Oxide Surfaces (P)

Osteoblast Adhesion and Spreading on the Chemical Modified Surface (L)

**de Haas, Ernst**

Extraction of Argon and Helium Traces from an Underground Stream of Gas (A)

**Debenedetti, Pablo**

Intellinet: Multi-modal, Nano-to-macro, Cyber-physical Intelligent Distributed System for Computing, Communication, and Control (D)

Intellinode: Small-scale Intelligent Cyber-physical Device for Sensing, Multi-modal Communication, and Control (D)

System and Method for Small-scale Intelligent Cyber-physical Device for Sensing, Multi-modal Communication, and Control (Intellinode) (A)

**Dennes, Thomas J.**

Functionalized Substrates and Methods of Making Same (A)

**Desandro, John**

Target Positioning Fixture (D)

**Dikmelik, Yamac**

Highly Power-efficient Quantum Cascade Lasers (A)

Ultra-strong Coupling Quantum Cascade Lasers (D)

**Djurovich, Peter**

Organometallic Complexes as Phosphorescent Emitters in Organic LEDs (A, P)

Organometallic Compounds and Emission-shifting Organic Electrophosphorescence (P)

Luminescent Compounds with Carbene Ligands (P)

Organometallic Compounds for Use in Electroluminescent Devices (P)

**Dogan, Hakan**

A Gibbs Sampling Based MAP Detection Algorithm for OFDM over Rapidly Varying Mobile Radio Channels (D)

OFDM Receiver Design in the Presence of High Mobility Fading Channels (A, D)

**Dogariu, Arthur**

Femtosecond Optimal Dynamic Discrimination Imaging of Atomic and Molecular Species (A, D)

Doppler Radar REMPI (L)

**Dunham, Maitreya**

Method for Identification of Novel Physical Linkages of Genomic Sequences (A)

**Dushoff, Jonathan**

Approaches to Influenza Vaccine Strain Selection and Vaccine Design (A, D)

**Dwoskin, Jeffrey**

Hardware Trust Anchors in SP-enabled Processors (A, D, L)

**Dylov, Dmitry V.**

System and Method for Nonlinear Self-filtering via Dynamical Stochastic Resonance (A)

**Edwards, John**

Crane Hook Laser Locating System (D)

**Escarra, Matthew**

Highly Power-efficient Quantum Cascade Lasers (A)

Ultra-strong Coupling Quantum Cascade Lasers (D)

**Estevez-Torres, Andre**

Directed Evolution Centrifugation Microfluidic Device (A, D)

**Fang, Wenwen**

Template-guided DNA Rearrangement (A, D)

**Feibush, Eliot**

Process for Administering Distributed Academic Competitions (D)

**Fetterman, Abraham**

Apparatus and Method for Converting Energy of Charged Fusion Products to Electric Potential Energy (D)

Apparatus and Method for Separation of Ions According to Mass (D)

Wave-driven Countercurrent Plasma Centrifuge (D)

**Fisch, Nathaniel**

Apparatus and Method for Converting Energy of Charged Fusion Products to Electric Potential Energy (D)

Apparatus and Method for Separation of Ions According to Mass (D)

Wave-driven Countercurrent Plasma Centrifuge (D)

**Fleischer, Jason**

System and Method for Nonlinear Self-filtering via Dynamical Stochastic Resonance (A)

**Florescu, Marian**

Disordered Photonic Heterostructures and Uses Thereof (A, D)

Method of Designing Photonic Heterostructures with Optimal Bandgap Properties for Arbitrary Symmetry and Arbitrary Long-range Translational Order (D)

**Floudas, Christodoulas**

Compstatin Variants (A, D)

Novel Inhibitors for HIV-1 gp41 (A, D)

**Forrest, Stephen R.**

Device and Method for Organic Vapor Jet Deposition (P)

Fluorescent Filtered Electrophosphorescence (P)

High Mobility High Efficiency Organic Films Based on Pure Organic Materials (P)

Intermediated Band Photosensitive Device with Quantum Dots Having Tunneling Barrier Embedded in Inorganic Matrix (P)

Method of Fabricating an Optoelectron Device Having a Bulk Heterojunction (P)

Method of Fabricating an Optoelectronic Device Having a Bulk Heterojunction (P)

OLEDs Doped with Phosphorescent Compounds (P)

Organic Triodes with Novel Grid Structures and Method of Production (A, P)

Organometallic Complexes as Phosphorescent Emitters in Organic LEDs (P)

Organometallic Compounds and Emission-Shifting Organic Electrophosphorescence (P)

Process and Apparatus for Organic Vapor Jet Deposition (P)

**Franz, Kale**

Highly Power-efficient Quantum Cascade Lasers (A)

Ultra-strong Coupling Quantum Cascade Lasers (D)

Voltage Tunability of Quantum Cascade Lasers (D)



**Frazier, Peter**

Knowledge Gradient Algorithm with Correlated Beliefs for Efficient Information Collection for a Finite Number of Alternatives (D)

The Knowledge Gradient Algorithm with Correlated Beliefs for Efficient Information Collection for a Finite Number of Alternatives (A)

**Freidenberg, Aaron**

Four-bar Linkage Application for Movable Bridges (D)  
Pantograph Gantry System (D)

**Fresia, Maria**

A Scheme for Lossy Joint Source-channel Coding at the Application Layer (A, D)

**Fukuzawa, Seketsu**

Glycopeptide Antibiotics, Combinatorial Libraries of Glycopeptide Antibiotics, and Methods of Producing Same (P)

**Fung, Ho Ki**

Novel Inhibitors for HIV-1 gp41 (A, D)

**Galbiati, Cristiano**

Extraction of Argon and Helium Traces from an Underground Stream of Gas (A)

**Gawalt, Ellen S.**

Osteoblast Adhesion and Spreading on the Chemical Modified Surface (L)

**Ge, Min**

Glycopeptide Antibiotics, Combinatorial Libraries of Glycopeptide Antibiotics, and Methods of Producing Same (P)

**Giardina, Sarah**

Methods for Identifying Genes Which Predict Disease Outcome for Patients with Colon Cancer (D)

**Giebink, Noel**

Fluorescent Filtered Electrophosphorescence (P)

**Giuseppe, Caire**

A Scheme for Lossy Joint Source-channel Coding at the Application Layer (A, D)

**Gmachi, Claire**

Non-invasive Device of Measuring Compounds and Dissolved Gases in Biological Tissue Using Infrared Absorption/Reflection Spectroscopy (A, D)

Quantum Cascade Wafer Testing (A, D)

Rotationally Asymmetric Chaotic Optical Multi-pass Cavity (A)

Sensor Networks for Cap and Trade Verification and Greenhouse Gas Monitoring (D)

Ultra-strong Coupling Quantum Cascade Lasers (D)

Voltage Tunability of Quantum Cascade Lasers (D)

**Goltsov, Alexander**

Doppler Radar REMPI (L)

**Goretti, Augusto**

Extraction of Argon and Helium Traces from an Underground Stream of Gas (A)

**Gray, Gordon**

Viscous Media Dispenser (L)

**Grisham, Larry**

Halogen-assisted Extraction of Negative Ions of Hydrogen Isotopes (D)

Magnetic Insulation to Improve Voltage Holding in Electrostatic Accelerators (D)

**Groves, John T.**

Novel Metalloporphyrins and Related Metal Complexes for the Treatment of Oxidative Stress and Diseases with Oxidative Components (A)

**Gu, Haoming**

Compounds for the Modulation of PP2A and Methods of Use (A)

**Han, Lin**

Hybrid Gate Insulator Material for Thin Film Transistors (A)

**Hanson, Eric L.**

Enhanced Bonding Layers on Native Oxide Surfaces (P)

**Happer, William**

Method for Eliminating Light Shift in Optical Pumping and Atomic Clocks (D)

Polarizing Nuclei in Solids via Spin Transfer from an Optically-pumped Alkali Vapor (A)

**Herrera-Alonso, Margarita**

Bridged Graphite Oxide Materials (A)

**Higgins, Douglas**

Identification of Bacterial Autoinducer and Use in Treating Bacterial Pathogenicity (A)

**Hill, Kenneth W.**

Non-astigmatic X-ray Imaging with Matched Pairs of Spherically Bent Crystals (D)

**Hoffman, Anthony**

Highly Power-efficient Quantum Cascade Lasers (A)

Ultra-strong Coupling Quantum Cascade Lasers (D)

**Howard, Scott**

Non-invasive Device of Measuring Compounds and Dissolved Gases in Biological Tissue Using Infrared Absorption/Reflection Spectroscopy (A, D)

**Hu, Zhigang**

Method and Apparatus for Reducing Leakage Power in a Cache Memory Using Adaptive Time-based Decay (P)

**Huang, Lotien R.**

Fractionation of Macro-molecules Using Asymmetric Pulsed Field Electrophoresis (A)  
Method for Continuous Particle Separation (L)

**Hughson, Frederick M.**

AI-2 Compounds and Analogs Based on Salmonella typhimurium LsrB Structure (A, P)

**Ianni, Andrea**

Extraction of Argon and Helium Traces from an Underground Stream of Gas (A)

**Ihm, Sunghwan**

Wide-area Network Acceleration for Developing-world Environments (A, D)

**Inaltekin, Hazer**

System and Method for Pricing and Exchanging Content (A)

**Ishikawa, Kiyoshi**

Polarizing Nuclei in Solids via Spin Transfer from an Optically-pumped Alkali Vapor (A)

**Jarvis, Emily A.**

Supported Metal Catalyst with Improved Thermal Stability (P)

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