

Tech ID	Technology Title
09-025	Synthesis of HDAC Inhibitors: Trichostatin A and Analogues
NCS:	Two methods for the simple synthesis of Trichostatin A (TCA), a anti-fungal, anti-malaria, and antibiotic agent, which is one of the most potent inhibitors of histone deacetylase (HDAC). TCA is a useful therapeutic for the treatment of cancer and cholesterol conditions.
10-001	Techniques to Enhance the Architecture of MTJ-based MRAM Memory Arrays
NCS:	A microprocessor that accesses memory that is structured within a common row or a common column.
10-002	Chemically Tailored Ionic Liquids for Gas Separations
NCS:	Heterocyclic ionic liquids useful in the selective absorption and separation of gases. Applications include natural gas purification and carbon capture.
10-003	Synthesis of HDAC inhibitors: Trichostatin A and Analogues
NCS:	Discloses a third method (in addition to those found in UND-2009-025) to prepare novel analogs of trichostatin acid which can further be manipulated into TSA derivatives, potentially useful for both anti-cancer and cholesterol treatments.
10-006	Method of Disease State Detection through Protein/Molecular Analysis
NCS:	A number of disease states, such as ovarian cancer, do not have reliable or accurate diagnostic tests. Biologic elements associated with diseased cells can provide an early indication of the condition.
10-008	Sensitive and Rapid Bacteria Detection by Impedance Spectrometry in Confined Domains
NCS:	Use of impedance spectroscopy for bacterial detection using the charge capacitance of the bacteria. A high frequency is used to determine the presence of bacteria.
10-011	A Nanoslot DNA Sensor for Quantitative Real-Time PCR
NCS:	A means to quickly and accurately quantify the number of amplified DNA as amplification occurs during real-time PCR using a nanoslot DNA sensor.
10-013	Sequence Detection in Dynamic Spectrum Access Networks
NCS:	Soft-input sequence detection algorithms, based upon the Forward-Backward algorithm, for spectrum sensing in dynamic spectrum access networks to minimize the detection risk in wireless networks that use cognitive radio. Spectrum sensing is a critical aspect of any wireless cognitive radio device seeking to utilize all channels in a bandwidth. This invention discloses a new system and method for detecting free windows for opportunistic users to take advantage of while limiting interference to other users.
10-017	Xylomanan Antifreeze Glycolipids
NCS:	Antifreeze glycoproteins that have been isolated from a freeze tolerant organisms. This glycoprotein can possibly be used for improved cryopreservation of biologically and medically important materials for research, organ and tissue transplant, and other purposes.
10-018	Plasma Optics
NCS:	An innovative plasma based adaptive optics approach that improves the performance of optical systems by reducing the affect of external optical distortions. Plasma optics uses an array of miniature weakly ionized a.c. plasma "cells" to generate a fast responding highly controllable wavefront to compensate for temporal and spatial distortion.
10-019	NDTB-1: A Supertetrahedral Cationic Framework that Solves the TcO₄ and Other Environmental Problems
NCS:	A supertetrahedral cationic framework with superb anion exchange capabilities. This material rapidly removes hazardous anions such as chromate and pertechnetate, which are hazardous solutions in the nuclear industry..
10-020	Screen for the Restoration of Reflexive/Behavioral Determinants of Whole Organisms, as a Marker for Recovery from Disease.
NCS:	The restoration of a cumulative score of reflexive/behavioural determinants may be used as an assay to screen small molecules or drugs that minimize or abrogate neuromuscular function.

- 10-021 **Heterostructure Based Low-leakage Buffer Tehcnology fo GaN Transistors**
- NCS:**
- 11-001 **Rapid, Label-Free and High-Throughput Electrokinetic Membrane Biosensors with Surface-Charge Inversion Signature, Buffer Composition Control and Micro-Circulation Sensitivity Enhancement**
- NCS:** A rapid and label-free biosensor for the detection of DNA, RNA and other molecular biomarkers at high throughput. This technology is based on how molecular docking can affect surface charge on a membrane and alter both local hydrodynamics and ion transport. This affect is can be measured sensitively and accurately.
- 11-010 **Microfluidic pH and pH gradient control for rapid isoelectric separation and other applications**
- NCS:** A pH actuator consists of membranes and microfulidics capable of dissociating water molecules to create a specific and contorllable pH gradient. This device is useful in the separation of proteins, dehydridization of biological molecules, and for porcess that are dependent on the establishment of an isoelectric point (i.e. crystallization and pharmaceutical manufacturing).
- 11-012 **Method and Appartus for Mass Spectrometry Analysis using Surface Acoustic Waves**
- NCS:** A device and method useful in the atomizaiton of analyte for further analysis in a time-of-flight instrument.
- 11-013 **Skewed Tip Holes for Compressor Blade**
- NCS:** Utilizes a skewed hole pattern in compressor blade design that allows for improved compressor performace (i.e. improved efficiency, greater margin to stall, etc.).
- 11-014 **Pressure-side Tip Groove for Compressor Blades**
- NCS:** Utilizes a groove cast or machined into the pressure side of a compressor blade that allows for improved compressor performace (i.e. improved efficiency, greater margin to stall, etc.).
- 11-015 **Tip Guide Slots for Compressor Blades**
- NCS:** Utilizes vanes or flow-guide slots that are cast or macnined into compressor blade tips that allows for improved compressor performace (i.e. improved efficiency, greater margin to stall, etc.).
- 11-018 **Method and Apparatus for Soil Moisture Sensing**
- NCS:** A wireless RF based system capable of detecting the amount of moisture in soil. Saturated and dry conditions can be determined which is useful in agricultural applicaitons.
- 11-020 **Geometrically driven mapping of 2D images to 3D surfaces**
- NCS:** Method of determing the geometrically correct regristration between a 2D imange and an objects geospatial information. This method can be applied in the architecture field or in biological and biomedical imaging applicaitons.
- 11-022 **Incremental MIMO: A Simple Protocol for Communicating with Multiple Antennas in Wireless Systems**
- NCS:** A method for using a devices multiple antennas for improved communication and data transfer.
- 11-028 **Sulfite as a Supplemental Electron Donor for Wastewater Denitrification**
- NCS:** Uses Sulfite, which can be produced cheaply and on-site, as an electron donor in wastewater treatment facility.
- 11-030 **Separation of Uranium from Complex Solutions Using Uranyl Peroxide Cage Clusters**
- NCS:** Provides the ability to separate uranium from a complex solution by the controlled formation of specific compounds. This technology providel means of concentrating uranium for use in the fuel cycle.
- 11-044 **Uranyl Peroxide Cage Clusters with Oxalate and Pyrophosphate Bridges**
- NCS:** Provides the ability to separate uranium from a complex solution by the controlled formation of specific compounds. This technology providel means of concentrating uranium for use in the fuel cycle.
- 11-053 **Probes for Lipid Trafficking**
- NCS:** Novel molecular probes to help elucidate the fundamental components and mechanisms of action along lipid trafficking pathways for genetic conditions like NPC as well as for cholesterol conditions.

12-001 **Hierarchical Carbon Nanotube Filters for Oil-Water Separation**

NCS: A technology for the separation of oil in water using a nanostructured platform.

12-003 **Solid State Battery by a Novel Processing Route**

NCS: A novel route for processing solid state batteries utilizing a solid state electrolyte have been developed. This process is scalable, low cost, and not dependent on vacuum based deposition routes like current techniques. It is equally well suited for primary or secondary LI ion batteries, as well as Li-air batteries.

12-004 **Dilation Aware Multi-image Enrollment for Iris Biometrics**

NCS: Improvement in the performance of a iris biometric recognition system can be achieved by accounting for pupil dilation of the probed image.

12-008 **Facile Solution-phase Synthesis of TiS₂ Nanobelts**

NCS: The facile production of titanium sulfide nanoparticles will enable its use in photocatalytic hydrogen production and Li ion batteries.