

# SwRI Patents

11/17/2009

For further information,  
contact the **Communications Department** at [action67@swri.org](mailto:action67@swri.org).

Patent No.	Date of Issue	Title of Invention	Inventor(s)	Assignee
7,610,791	11/3/2009	Time-gain Control Method and System for Ion-Range Guided-Wave Inspection and Monitoring	Hegeon Kwun, Ronald H. Peterson	SwRI
7,603,245	10/13/2009	Blind Estimation of Bandwidth and Duration Parameters of an Incoming Signal	Jared McGehee	SwRI
7,597,016	10/6/2009	Fuel Deposit Testing Using Burner-Based Exhaust Flow Simulation System	Suzanne A. Timmons, Scott F. Timmons	SwRI
7,592,051	9/22/2009	Nanostructured Low-CR CU-CR Coatings for the High Temperature Oxidation Resistance	Kuang-Tsan Kenneth Chiang, James H. Arps, Ronghua Wei	SwRI
7,588,516	9/15/2009	Virtual Reality System Locomotion Interface Utilizing a Pressure-Sensing Mat	Warren Carl Couvillion, Jr., Roger Rene Lopez, Jian Ling	SwRI
7,588,001	9/15/2009	Split-Cycle Four-Stroke Engine	David P. Branyon, Jeremy D. Eubanks	SwRI
7,580,004	8/25/2009	System and Method for Position or Range Estimation, Tracking, and Selective Interrogation and Communication	Ralph E. Hayles, Jr., James A. Moryl	Sponsored
7,573,577	8/11/2009	Spatial Heterodyne Wide-Field Coherent Anti-Stokes Raman Spectromicroscopy	Robert E. Martinez	SwRI
7,573,369	8/11/2009	System and Method for Interrogating and Locating a Transponder Relative to a Zone-of-Interest	Ralph E. Hayles, Jr., James A. Moryl	Sponsored
7,572,345	8/11/2009	Life Extension of Chromium Coatings and Chromium Alloys	Geoffrey Dearnaley, Kevin C. Walter	Sponsored
7,565,252	7/21/2009	Method for Automatic Differentiation of Weld Signals from Defect Signals in Long-Range Guided-Wave Inspection Using Phase Comparison	Sang Young Kim, Hegeon Kwun	SwRI
7,565,237	7/21/2009	Control of In-Cylinder Conditions of an Internal Combustion Engine Operating with Multiple Combustion Modes	Junmin Wang	SwRI
7,562,649	7/21/2009	Combustion Control System Based on In-Cylinder Condition	Jayant V. Sarlashkar, Shizuo Sasaki, Gary D. Neely	SwRI

# SwRI Patents

11/17/2009

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7,557,570	7/7/2009	System and Method for Producing Color Contour Maps of Surface Defects of High Pressure Pipelines	Alfred E. Crouch, Todd Goyen, Patrick C. Porter, Shawn Laughlin	Sponsored
7,556,743	7/7/2009	Nanocomposites and Methods for Synthesis and Use Thereof	Benjamin R. Furman, Stephen T. Wellinghoff, Paul M. Thompson, Ralph Rawls	Government Sponsored
7,550,126	6/23/2009	NOx Augmentation in Exhaust Gas Simulation System	Cynthia C. Webb, Christopher A. Sharp	SwRI
7,528,762	5/5/2009	Signal Processing Methods for Ground Penetrating Radar from Elevated Platforms	Stephen A. Cerwin	SwRI
7,528,607	5/5/2009	Measurement of CN Emissions from Engine Spark Igniter for characterization of Spark Igniter Energy	Terrence F. Geoffrey Dearnaley and Kevin C. Walter Alger II	SwRI
7,520,965	4/21/2009	Magnetron Sputtering Apparatus and Method for Depositing a Coating Using Same	Ronghua Wei	SwRI
7,520,836	4/21/2009	Virtual Reality System Locomotion Interface Utilizing a Pressure-Sensing Mat Attached to Movable Base Structure	Warren C. Couvillion Jr., Roger Rene Lopez, Jian Ling	SwRI
7,512,479	3/31/2009	Air Fraction Estimation for Internal combustion Engines with Dual-Loop EGR Systems	Jummin Wang	SwRI
7,504,992	3/17/2009	Wireless System Using Continuous Wave Phase Measurement for High-Precision Distance Measurement	Michael E. Pilcher Jr., Brian E. Champion, and Ben A. Abbott	SwRI
7,501,814	3/10/2009	Apparatus and Method for Inspection of Aircraft Wing Attachment Fittings Using Electric Current Perturbation	Clinton J. Thwing, Gary L. Burkhardt	U.S. Air Force
7,497,077	3/3/2009	System and Method for Dispensing an Aqueous Urea Solution into an Exhaust Gas Stream	Lee G. Dodge, Paul H. Kunkel	SwRI
7,495,447	2/24/2009	Benchtop Test System for Testing Spark Plug Durability	Terrence Francis Alger II, Darius Mehta, Charles Edward Roberts Jr.	SwRI
7,487,766	2/10/2009	Flexible Fuel Engines with Exhaust Gas Recirculation for Improved Engine Efficiency	Terrence Francis Alger, Barrett Wade Mangold	SwRI
7,481,652	2/27/2009	Endodontic Reamer and Files	Steven Senia, Stuart Minica, E. Steve Senia, William L. Wildey,	Sponsored

# SwRI Patents

11/17/2009

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			Gene Rimmer, Ed D. Moore	
7,474,092	1/6/2009	Method and Device for Long-Range Guided-Wave Inspection of Fire Side of Waterwall Tubes in Boilers	Hegeon Kwun, Hirotohi Matsumoto, James F. Crane	SwRI
7,469,596	12/30/2008	Measurement of Constitutive Properties of a Powder Specimen Subject to Compressive Axial and Radial Loading, Using Eddy Current Sensing	Alexander Beltran Bernardo, Gary Lane Burkhardt, Arthur Edwin Nicholls, Walter Mac Gray	SwRI
7,466,827	12/29/2008	System and Method for Simulating Audio Communications Using a Computer Network	Kase J. Saylor, Gary L. Ragsdale, Jimmy R. Gaddy, Stephen R. Gray	SwRI
7,465,360	12/16/2008	Methods for Removing a Dispersed Lubricious Coating from a Substrate	Cliff J. Scribner	SwRI
7,464,673	12/16/2008	Single-ended Barrel Engine with Double-Ended, Double Roller Pistons	Charles Russell Thomas, Bret R. Hauser, David P. Branyon	Sponsored
7,459,999	12/2/2008	Variable-Diameter Electromagnetic Coil	Gary L. Burkhardt, Albert J. Parvin Jr., Todd H. Goyen	SwRI
7,459,067	12/2/2008	Semi-Permanent Reference Electrode	Darrell S. Dunn, Christopher S. Brossia	SwRI
7,422,607	9/9/2008	Anti-Calcification Treatments for Heart Valves and Vascular Grafts	Henry W. Oviatt, Neal K. Vail	SwRI
7,421,915	9/9/2008	Nondestructive Inspection Apparatus	Tadashi Yamane, Yasuhiko Katsube, Takashi Sato, Albert J. Parvin, Rolf Glauser and James F. Crane	Sponsored
7,421,888	10/10/2008	Regenerative System for Testing Torque Converters and Other Transmission Coupling Devices	Denis Long, Glenn Wendel	SwRI
7,420,195	9/2/2008	Frequency-Optimized Detection of Gun Muzzle Flashes	Stephen A. Cerwin, Thomas C. Untermeyer, David Bing Jue Chang, Thomas J. Warnagiris	SwRI
7,419,942	9/2/2008	Easily Dispensed, Anti-Traction, Mobility Denial System	William A. Mallow, Ronald J. Mathis, Andrew Warren, Christian J. Schwartz,	SwRI

# SwRI Patents

11/17/2009

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			Errol M. Brigance, Kenneth R. Collins, Nicholle K. Reinhardt, Mary C. Marshall	
7,419,941	10/10/2008	Lubricant Oils and Greases Containing Nanoparticles	John A. Waynick	SwRI
7,412,822	8/12/2008	Regeneration Control for Diesel Particulate Filter for Treating Diesel Engine E	Rijing Zhan, Yiqun Huang	SwRI
7,412,335	8/12/2008	Component Evaluations Using Non-Engine Based Test System	Andy Morris Anderson, Gordon James Johnston, Cynthia C. Webb, Martin J. Heimrich, Thomas R. Gabehart, Bruce B. Bykowski	SwRI
7,405,184	7/29/2008	Anti-traction, mobility denial methods and products	Ronald J. Mathis, Mary C. Marshall, Nicholle K. Reinhardt, Errol M. Brigance, Geronimo I. Elias Jr., Kenneth R. Collins	SwRI
7,398,160	7/8/2008	Gas Energy Meter for Inferential Determination of Thermophysical Properties of a Gas Mixture at Multiple States of the Gas	Thomas B. Morrow, Eric Kelner, Thomas E. Owen	SwRI
7,389,752	6/24/2008	Use of Engine Lubricant as Ignition Fuel for Micro-Pilot Ignition System of an Internal Combustion Engine	Terrence F. Alger II, Jess W. Gingrich, Stephen F. Hahne	SwRI
7,389,173	6/17/2008	Control System for an Internal Combustion Engine Operating with Multiple Combustion Modes	Junmin Wang	SwRI
7,387,592	6/17/2008	Virtual Reality System Locomotion Interface Utilizing a Pressure-Sensing Mat	Warren Carl Couvillion Jr., Roger Rene Lopez, Jian Ling	SwRI
7,383,592	6/10/2008	Insulating Medium	Marshall L. Nuckolls, Jerry A. Henkener	SwRI
7,382,471	6/3/2008	Non-Contact Apparatus and Method for Measuring Surface Profile	Ernest A. Franke, Michael J. Magee, Michael P. Rigney, Joseph N. Mitchell, Robert J. Beeson	SwRI
7,381,426	6/3/2008	Targeted Delivery of Bioactive Factors to the Systemic Skeleton	Neal Vail	SwRI

# SwRI Patents

11/17/2009

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7,381,153	6/3/2008	Virtual Reality System Locomotion Interface Utilizing a Pressure-Sensing Mat	Warren C. Couvillion Jr., Roger R. Lopez, Jian Ling	SwRI
7,381,152	6/3/2008	Virtual Reality System Locomotion Interface Utilizing a Pressure-Sensing Mat	Warren C. Couvillion Jr., Roger R. Lopez, Jian Ling	SwRI
7,379,852	5/27/2008	N-Phase Interface Tracking Method Utilizing Unique Enumeration of Microgrid Cells	Christopher J. Freitas, Mary Ann Clarke	Sponsored
7,372,031	5/13/2008	System and Method for Sensitive Photon Detection	Stephen A. Cerwin, David B. Chang	SwRI
7,364,599	4/29/2008	Methods for Increased Removal of Drag Reducer Additives from Liquid Hydrocarbon Fuel Date of Issue	John Andrew Waynick	SwRI
7,363,043	4/22/2008	Passive GSM-Based Self-Locating Device	Thomas H. Jaeckle, Richard L. Johnson, Michael A. Koets, M. LaVarre Bushman	SwRI
7,357,900	4/15/2008	Nox Reduction System for Diesel Engines, Using hydrogen Selective Catalytic Reduction	Gordon James Johnston Bartley, Christopher Alan Sharp	SwRI
7,351,480	4/1/2008	Tubular Structures with Coated Interior Surfaces	Ronghua Wei, Christopher Rincon, James Arps	SwRI
7,347,086	3/25/2008	System and Method for Burner-Based Accelerated Aging of Emissions Control Device, With Engine Cycle Having Cold Start And Warm Up Modes	Cynthia C. Webb, Bruce B. Bykowski, Gordon J. Bartley	SwRI
7,336,181	2/26/2008	Tagging and Tracking System for Assets and Personnel of a Commercial Enterprise	Brent M. Nowak, Michael F. Milam, Myron L. Moodie, Kenneth A. Oleson, Michael J. Lake, Sandra G. Dykes, Larry D. Canady, Charles A. Poer, John E. Fike Jr.	Sponsored
7,309,414	12/18/2007	Method for Measuring Localized Corrosion Rate with a Multi-Electrode Array Sensor	Lietai Yang	SwRI
7,303,834	12/4/2007	Catalytic Coatings and Fuel Cell Electrodes and Membrane Electrode Assemblies Made Therefrom	Geoffrey Dearnaley, James H. Arps	SwRI Assigned
7,299,623	11/27/2007	Method for Controlling Exhaust Gas Temperature and Space Velocity during Regeneration to Protect	Rudolf H. Stanglmaier, Ryan C. Roecker,	SwRI

# SwRI Patents

11/17/2009

Patent No.	Date of Issue	Title of Invention	Inventor(s)	Assignee
		Temperature Sensitive Diesel Engine Components and Aftertreatment Devices	Charles E. Roberts Jr., Lee G. Dodge, Christopher J. Chadwell, Darius Mehta, Daniel W. Stewart	
7,299,137	11/20/2007	Method for Drive Cycle Simulation Using Non-engine Based Test System	Gordon J. Bartley, Andy M. Anderson, Cynthia C. Webb, Bruce B. Bykowski	SwRI
7,297,963	11/20/2007	Method for Determination of Fuel Thermal Stability	Clifford A. Moses, David W. Naegeli, George R. Wilson III	SwRI
7,288,945	10/30/2007	Systems and Methods for Detection of Dielectric Change in Material and Structure	Robert E. Martinez, Stephen A. Cerwin, Todd H. Goyen	SwRI
7,283,664	10/16/2007	Interactive Computer Aided Analysis of Images from Sensor Combinations	Michael J. Magee, Ernest A. Franke, Jeremy K. Zoss	SwRI
7,277,801	10/2/2007	Method for Testing Catalytic Converter Durability	Cynthia C. Webb, Bruce B. Bykowski, Gordon J. Bartley	SwRI
7,276,467	10/2/2007	Insulating Medium	Marshall L. Nuckols, Jerry A. Henkener	SwRI
7,275,916	10/2/2007	Integrated Engine/Compressor Control for Gas Transmission Compressors	Jack A. Smith, James J. Cole, Gary D. Bourn, Ralph E. Harris, Anthony J. Smalley	SwRI
7,275,365	10/2/2007	Method for Controlling Temperature in a Diesel Particulate Filter During Regeneration	Rijing Zhan, Yiqun Huang, Magdi K. Khair	SwRI
7,266,439	9/4/2007	Fuel Property-Adaptive Engine Control System with On-Board Fuel Classifier	Junmin Wang, Gary D. Neely, Shizuo Sasaki, Thomas W. Ryan III	SwRI
7,264,640	9/4/2007	Method for Improving the Performance of Engines Powered by Liquid Hydrocarbon Fuel	John Andrew Waynick	SwRI
7,261,914	8/28/2007	Method and Apparatus for Forming a Nitride Layer on a Biomedical Device	Ronghua Wei, Thomas L. Booker, Christopher Rincon, James H. Arps	SwRI

# SwRI Patents

11/17/2009

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7,261,747	8/28/2007	Removal of Drag Reducer Additive from Liquid Hydrocarbon Fuel Using Attapulugus Clay	John A. Waynick	SwRI
7,261,529	8/28/2007	Apparatus for Preparing Biodegradable Microparticle Formulations Containing Pharmaceutically Active Agents	Joseph T. Persyn, Joseph A. McDonough, Neal K. Vail, Darren E. Barlow, Albert M. Zwiener, Eliot M. Slovin	SwRI
7,261,086	8/28/2007	Fast Warm-Up of Diesel Aftertreatment System During Cold Start	Yiqun Huang	SwRI
7,252,684	8/7/2007	Ceramic in Replacement Components	Geoffrey Dearnaley	SwRI
7,240,670	7/10/2007	Extended Duration High-Energy Ignition Circuit	Terrence F. Alger II, Barrett W. Mangold	SwRI
7,239,954	7/3/2007	Method for Rapid, Stable Torque Transition Between Lean Rich Combustion Modes	Yiqun Huang	SwRI
7,238,831	7/3/2007	MESOGENS	Stephen T. Wellinghoff, Douglas P. Hanson	SwRI
7,236,876	6/26/2007	Use of Transient Data to Derive Steady State Calibrations for Dynamic Systems	Jayant V. Sarlashkar, Charles E. Roberts Jr., Scott J. Schneider	SwRI
7,212,926	5/1/2007	Testing Using a Non-Engine Based Test System and Exhaust Product Comprising Alternative Fuel Exhaust	Melvin N. Ingalls Jr., Gordon J.J. Bartley, Cynthia C. Webb	SwRI
7,206,688	4/17/2007	Control System for Engines Having Multiple Combustion Modes	Junmin Wang, Jayant V. Sarlashkar	SwRI
7,198,555	4/3/2007	Atomizer Cooling by Liquid Circulation Through Atomizer Tip Holder	Lee Dodge	SwRI
7,197,867	4/3/2007	Method for the Simultaneous Desulfation of a Lean NOx Trap and Regeneration of a Diesel Particulate Filter	Yiqun Huang, Shizuo Sasaki, Gary D. Neely	SwRI
7,197,403	3/27/2007	Inferential Determination of Various Properties of a Gas Mixture	Thomas B. Morrow, Kendricks A. Behring II	SwRI
7,195,006	3/27/2007	Exhaust Gas Recirculation System with Control of EGR Gas Temperature	Magdi K. Khair, Yiqun Huang, Christopher A. Sharp, Cynthia C. Webb	SwRI
7,189,574	3/13/2007	Measurement of Nitrogen Content in a Gas Mixture by Transforming the Nitrogen into a Substance	Thomas E. Owen, Michael A. Miller	SwRI

# SwRI Patents

11/17/2009

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		Detectable with Nondispersive Infrared Detection		
7,186,443	3/6/2007	Systems and Methods for Dispensing an Anti-Traction, Mobility Denial Material	Cliff J. Scribner, Geronimo I. Elias Jr.	SwRI
7,186,094	3/6/2007	Method and Apparatus for Measuring Work Performed by a Compressor	Carl E. Edlund, Ralph E. Harris, Kurt A. Franke	Sponsored
7,182,710	2/27/2007	Observer-Based Control Method for Automatically Shifting a Manual Transmission	Bapiraju Surampudi	SwRI
7,180,970	2/20/2007	Automatic Link Establishment Using External Synchronization	Thomas L. Warnagiris, Gary L. Ragsdale	SwRI
7,175,422	2/13/2007	Method for Accelerated Aging of Converters Incorporating Injection of Volatilized Lubricant	Cynthia C. Webb, Brent A. Shoffner, Gordon J. Bartley	SwRI
7,168,411	1/30/2007	Closed Loop Engine Control for Regulating NOx Emissions, Using a Two-Dimensional Fuel-Air Curve	Gary D. Bourn, Jack A. Smith, Jess W. Gingrich	SwRI
7,164,785	1/16/2007	Apparatus and Methods of Generation of Textures with Depth Buffers	Ryan Converse Logan, Ernest August Franke, Eric Conrad Peterson	SwRI
7,163,668	1/16/2007	Hydrogen Selective Catalytic Reduction for NOx	Gordon James Johnston Bartley, Christopher Alan Sharp	SwRI
7,163,007	1/16/2007	Control System for Internal Combustion Engine	Shizuo Sasaki, Junmin Wang, Gary D. Neely	Sponsored
7,162,861	1/16/2007	Method of Improving Performance of Emission Control Devices by Controlling Exhaust Oxygen Content	Magdi K. Khair	SwRI
7,156,642	1/2/2007	Dough Rolling Apparatus and Method	Marlin L. Anderson, David Lawrence Barry, David Brian Emerson, William C. Flannigan, John D. Kiel, Geoffrey T. Ley, Thomas E. Lyons, Richard James Ruegg	Sponsored
7,155,107	12/26/2006	System and Method for Detection of Fiber Optic Cable Using Static and Induced Charge	Jerome A. Helffrich, Glenn M. Light, Clinton J. Thwing	SwRI

# SwRI Patents

11/17/2009

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7,154,264	12/26/2006	System and Method Using a Collapsible Coil for Inspection of Pipelines Having Internal Restrictions	Gary L. Burkhardt, Alfred E. Crouch, Jay L. Fisher	SwRI
7,147,800	12/12/2006	Selective Ether Cleavage Synthesis of Liquid Crystals	Stephen T. Wellinghoff, Douglas P. Hanson	SwRI
7,142,975	11/28/2006	Virtual Cylinder Pressure Sensor with Individual Estimators for Pressure-Related Values	Junmin Wang, Ryan C. Roecker, Charles E. Roberts Jr.	SwRI
7,140,874	11/28/2006	Method and Apparatus for Testing Catalytic Converter Durability	Melvin N. Ingalls Jr., Gordon J. Bartley, Cynthia C. Webb	SwRI
7,137,955	11/21/2006	Methods and Systems for Distal Recording of Phonocardiographic Signals	Keith A. Bartels, Kevin S. Honeyager, Larry D. Canady Jr.	Sponsored
7,137,379	11/21/2006	Method for Rich Pulse Control of Diesel Engines	Shizuo Sasaki, Gary D. Neely	SwRI
7,135,153	11/14/2006	NOx Reduction System for Diesel Engines, Using Hydrogen Selective Catalytic Reduction	Gordon J. Bartley, Christopher A. Sharp	SwRI
7,134,543	11/14/2006	Containment Apparatus for Multi-Pass Ovens	David Lawrence Barry, David Brian Emerson, William C. Flannigan, John D. Kiel, Geoffrey T. Ley, Thomas E. Lyons, Devang Jitendra Sutaria	Sponsored
7,131,339	11/7/2006	Measurement of Torsional Dynamics of Rotating Shafts Using Magnetostrictive Sensors	Hegeon Kwun, Sang-Young Kim	SwRI
7,130,243	10/31/2006	Location Finding System, Using Reflected Radio Frequency or Acoustic Signals in a Crowded Reflector Environment	Michael A. Koets	SwRI
7,126,557	10/24/2006	Tapered Area Small Helix Antenna	Thomas J. Warnagiris	SwRI
7,126,528	10/24/2006	Method for Delivering Secondary (Non-Location) Data to a GPS Receiver	Jennifer L. Alvarez, Roger R. Chiodo, Thomas H. Jaeckle	SwRI
7,123,149	10/17/2006	Tagging and Tracking System for Assets and Personnel of a Commercial Enterprise	Brent M. Nowak, Michael F. Milam, Myron L. Moodie, Kenneth A. Oleson, Michael J. Lake, Sandra G. Dykes, Larry D. Canady,	Sponsored

# SwRI Patents

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			Charles A. Poer, John E. Fike Jr.	
7,121,236	10/17/2006	Split-Cycle Engine with Dwell Piston Motion	Salvatore C. Scuderi, David P. Branyon	Sponsored
7,108,801	9/19/2006	Methods and Blends for Controlling Rheology and Transition Temperature of Liquid Crystals	Stephen T. Wellinghoff, Douglas P. Hanson	SwRI
7,107,851	9/19/2006	Processing Data, for Improved Accuracy, from a Device for Measuring Speed of Sound in a Gas	Thomas E. Owen	SwRI
7,098,359	8/29/2006	Mesogens and Methods for Their Synthesis and Use	Stephen T. Wellinghoff, Douglas P. Hanson	SwRI
7,094,360	8/22/2006	Resin Blends and Methods for Making Same	Stephen T. Wellinghoff, Douglas P. Hanson	SwRI
7,094,055	8/22/2006	Endodontic Reamer and a Method for Manufacturing Endodontic Reamers and Files	Steven Senia, Stuart Minica, E. Steve Senia, William L. Wildey, Gene Rimmer, Ed. D. Moore	Sponsored
7,077,048	7/18/2006	Multi-Layered Trap Ballistic Armor	Charles E. Anderson Jr., Dennis L. Orphal, Gordon R. Johnson	SwRI and Sponsored
7,076,361	7/11/2006	Engine Crankshaft Position Recognition and Tracking Method Applicable to Cam and Crankshaft Signals with Arbitrary Patterns	Junmin Wang, Jayant V. Sarlashkar	SwRI
7,067,464	6/27/2006	Easily Dispensed, Anti-Traction Mobility Denial System	William A. Mallow, Ronald J. Mathis, Christian J. Schwartz, Errol M. Brigance, Kenneth R. Collins, Nicholle K. Reinhardt, Mary C. Marshall	SwRI
7,062,905	6/20/2006	Control Method for Dual Path NOx Adsorber System	Magdi K. Khair, Harley D. Ferguson III	SwRI
7,062,900	6/20/2006	Single Wheel Radial Flow Gas Turbine	Klaus Brun	SwRI
7,061,628	6/13/2006	Non-Contact Apparatus and Method for Measuring Surface Profile	Ernest A. Franke, Michael J. Magee, Michael P. Rigney, Joseph N. Mitchell, Robert J. Beeson	SwRI

# SwRI Patents

11/17/2009

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7,059,278	6/13/2006	Locomotive Engine Charge Air Cooling System and Method for Cooling the Engine	John C. Hedrick, Steven G. Fritz	SwRI
7,052,736	5/30/2006	Method for Depositing Coatings on the Interior Surfaces of Tubular Structures	Ronghua Wei, Christopher Rincon, James Arps	SwRI
7,046,739	5/16/2006	Pre-Distortion of Input Signals to Form Constant Envelope Signal Outputs	Michael E. Pilcher	SwRI
7,041,234	5/9/2006	Methods for Synthesis of Liquid Crystals	Stephen T. Wellinghoff, Douglas P. Hanson	SwRI
7,038,444	5/2/2006	System and Method for In-Line Stress Measurement by Continuous Barkhausen Method	Alfred E. Crouch, Gary L. Burkhardt	SwRI
7,037,583	5/2/2006	Functionalized Zirconium Oxide Particles	Benjamin R. Furman, Stephen T. Wellinghoff, Henry R. Rawls, Hong Dixon, Barry K. Norling	SwRI and Sponsored
7,037,304	5/2/2006	Implantable System for Cell Growth Control	Mark B. Lyles, Charles A. McLaughlin, Glenn A. Half, Jr., William A. Mallow	Sponsored
7,032,376	4/25/2006	Diesel Fuel Burner for Diesel Emission Control System	Cynthia C. Webb, Jeffrey A. Mathis	SwRI
7,025,580	4/11/2006	Method and Apparatus for Lining a Conduit	Richard T. Heagy, Cynthia D. Heagy, Tom R. Menger, John Simonis	Sponsored
7,019,520	3/28/2006	Method and System for Torsional Wave Inspection of Heat Exchanger Tubes	Hegeon Kwun, James F. Crane, Sang-Young Kim	SwRI
7,018,434	3/28/2006	Removal of Drag Reducer Additive from Fuel by Treatment with Selected Activated Carbons and Graphites	John Andrew Waynick	SwRI
7,017,547	3/28/2006	Method and Apparatus for Controlling Liquid-Phase Fuel Penetration Distance in a Direct-Fuel Injected Engine	Darius Mehta, Lee G. Dodge, Rudolf H. Stanglmaier, Charles E. Roberts Jr.	SwRI
7,010,914	3/14/2006	Method for Controlling Boost Pressure in a Turbocharged Diesel Engine	Charles E. Roberts Jr., Ryan C. Roecker	SwRI
7,010,433	3/7/2006	Indirect Measurement of Diluents in a Multi-Component Natural Gas	Thomas B. Morrow, Thomas E. Owen	SwRI

# SwRI Patents

11/17/2009

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7,002,079	2/21/2006	Indicators for Early Detection of Potential Failures Due to Water Exposure of Polymer-Clad Fiberglass	Joseph N. Mitchell, Spring M. Haby, Dennis S. Rushforth, Mark E. Van Dyke, Henry W. Oviatt Jr., Andrew J. Phillips, Ralph H. Hill Jr., Mary C. Marshall	Sponsored
6,990,857	1/31/2006	Fuel Injector Timing Tool	Gary D. Bourn, John C. Hedrick, Steven G. Fritz, Larry W. Wolter	SwRI
6,988,365	1/24/2006	Dual Loop Exhaust Gas Recirculation System for Diesel Engines and Method of Operation	Shizuo Sasaki	SwRI
6,987,396	1/17/2006	Sensor Array for Electrochemical Corrosion Monitoring	Lietai Yang, Narasi Sridhar	SwRI
6,986,329	1/17/2006	Split-Cycle Engine with Dwell Piston Motion	Salvatore C. Scuderi, David P. Branyon	Sponsored
6,985,172	1/10/2006	Model-Based Incident Detection System with Motion Classification	Michael P. Rigney, Michael J. Magee, Ernest A. Franke	SwRI
6,983,645	1/10/2006	Method for Accelerated Aging of Catalytic Converters Incorporating Engine Cold Start Simulation	Cynthia C. Webb, Bruce B. Bykowski, Gordon J. Bartley	SwRI
6,981,838	1/3/2006	Method and Apparatus for Detecting the Occurrence of Surge in a Centrifugal Compressor	Robert J. McKee, Carl E. Edlund	Sponsored
6,981,488	1/3/2006	Internal Combustion Engine Cylinder-to-Cylinder Balancing with Balanced Air-Fuel Ratios	Ralph E. Harris, Gary D. Bourn, Anthony J. Smalley	SwRI
6,981,401	1/3/2006	Method for Testing Properties of Corrosive Lubricants	James Ohi, Jose L. De La Cruz, Paul I. Lacey	SwRI
6,969,857	11/29/2005	Compensated Infrared Absorption Sensor for Carbon Dioxide and Other Infrared Absorbing Gases	Thomas E. Owen	SwRI and Sponsored
6,968,727	11/29/2005	Calibration Method and Device for Long Range Guided Wave Inspection of Piping	Hegeon Kwun, Sang-Young Kim, Glenn M. Light	SwRI
6,966,309	11/22/2005	In-Cylinder Reburn Method for Emissions Reduction	Charles E. Roberts Jr., Rudolf H. Stanglmaier	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
6,964,158	11/15/2005	Method and Apparatus for Particle-Free Exhaust Gas Recirculation for Internal Combustion Engines	Imad Said Abdul-Khalek	SwRI
6,962,143	11/8/2005	High-Efficiency, Low Emission Gasoline Engines for Heavy-Duty Applications	Thomas W. Ryan III, Robert W. Burrahm, Rudolf H. Stanglmaier, Charles E. Roberts Jr., James Corwin Snyder, Lee G. Dodge, Daniel W. Stewart, Timothy J. Callagan, John T. Kubesh	SwRI
6,952,923	10/11/2005	Split-Cycle Four-Stroke Engine	David P. Branyon, Jeremy D. Eubanks	SwRI
6,948,310	9/27/2005	Use of a Variable Valve Actuation System to Control the Exhaust Gas Temperature and Space Velocity of Aftertreatment System Feedgas	Charles E. Roberts Jr., Andrew C. Mathaeus, David P. Branyon, Rudolf H. Stanglmaier, Lee G. Dodge, Thomas W. Ryan III, Daniel W. Stewart	SwRI
6,946,777	9/20/2005	Polymer Film Composite Transducer	Thomas E. Owen	SwRI and Sponsored
6,939,686	9/6/2005	Methodology of Using Raman Imaging Microscopy for Evaluating Drug Action Within Living Cells	Jian Ling, Steven D. Weitman, Michael A. Miller	SwRI
6,930,254	8/16/2005	Chemically-Doped Composite Insulator for Early Detection of Potential Failures Due to Exposure of the Fiberglass Rod	Andrew J. Philips, Ralph H. Hill Jr., Mary C. Marshall, Joseph N. Mitchell, Stephen J. Hudak Jr.	Sponsored
6,925,888	8/9/2005	MEMS Sensor for Detecting Stress Corrosion Cracking	Christopher S. Brossia, Heather S. Hanson	SwRI
6,925,881	8/9/2005	Time Shift Data Analysis for Long-Range Guided Wave Inspection	Hegeon Kwun, Kim Sang-Young	SwRI
6,917,196	7/12/2005	Method and Apparatus Generating and Detecting Torsional Wave Inspection of Pipes or Tubes	Hegeon Kwun, Kim Sang-Young, James F. Crane, Myoung-Seon Choi	SwRI
6,916,273	7/12/2005	Virtual Reality System Locomotion Interface Utilizing a Pressure-Sensing Mat	Warren C. Couvillion Jr., Roger R. Lopez, Jian Ling	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
6,913,805	7/5/2005	Controlled Release Ampule Containing a Fumigant	William W. Harlowe Jr., William A. McMahon, Donald J. Mangold, Bruce Bernstein	SwRI
6,912,414	6/28/2005	Electrode Systems and Methods for Reducing Motion Artifact	David A. Tong	SwRI
6,911,828	6/28/2005	Apparatus and Method for Detecting the Degradation of a Coating Using Embedded Sensors	Christopher S. Brossia, Darrell S. Dunn	SwRI
6,907,354	6/14/2005	Synthetic Gas Reactor System with Gas or Liquid Injection	Rijing Zhan, Thomas R. Gabehart	SwRI
6,889,177	5/3/2005	Large Area Pattern Erosion Simulator	Scott R. Runnels	SwRI
6,887,369	5/12/2005	Pretreatment Processes for Heavy Oil and Carbonaceous Materials	David S. Moulton, Jimell Erwin	SwRI
6,881,482	4/19/2005	Microencapsulation Using Electromagnetic Energy and Core and Shell Materials with Different Dielectric Constants and Dissipation Factors	Niraj Vasisht	SwRI
6,873,746	3/29/2005	Apparatus and Method for Monitoring a Cable	Andrew H. Stewart, K. Arun Pandey, Glenn M. Light, Richard F. Tennis, Bernard A. Clairmont, Edward A. Bloom, Keith A. Bartels	Sponsored
6,850,847	2/1/2005	Device for Determining Thermophysical Properties of a Multi-Component Gas at Arbitrary Temperature and Pressure	Thomas B. Morrow, Kendricks A. Behring II	SwRI
6,841,593	1/11/2005	Microencapsulated and Macroencapsulated Drag Reducing Agent	Nagesh S. Kommareddi, Ryan Dinius, Niraj Vasishtha, Darren Eugene Barlow	Sponsored
6,836,735	12/28/2004	Method and System for Injecting Virtual Flaw Signals into a Nondestructive Test System	Gary L. Burkhardt, Jay L. Fisher, Ronald H. Peterson	SwRI
6,836,502	12/28/2004	Spectroscopy Light Source	Larry D. Canady, Christopher B. Catterson, Reuben W. Edgar Jr., Ralph Henry Hill Jr., Brian Lee Robey	Sponsored
6,834,636	12/28/2004	Single-Ended Barrel Engine with Double-Ended, Double Roller Pistons	Charles Russell Thomas, Bret R. Hauser, David P. Branyon	Sponsored

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
6,832,734	12/21/2004	Media Discharge Device	William J. Rafferty, William C. Flannigan	SwRI
6,832,472	12/21/2004	Method and Apparatus for Controlling Exhausted Gas Emissions During Cold-Start of an Internal Combustion Engine	Yiqun Huang, Joseph Grogan	SwRI
6,823,716	11/30/2004	Device for Precision Measurement of Speed of Sound in a Gas	Eric Kelner, Ali Minachi, Thomas E. Owen, Marion Burzynski Jr., Steven P. Petullo	SwRI
6,815,948	11/9/2004	Method of Detecting Tension Wire Break in Concrete Pole	Hegeon Kwun, Sang-Young Kim, Kyoichi Asano	Sponsored
6,815,689	11/9/2004	Mass Spectrometry with Enhanced Particle Flux Range	David John McComas	SwRI
6,815,006	11/9/2004	Methods for Making Ceramic Matrix Composites Using Precursor Polymers to Refractory Metal Carbides and Metal Borides	Partha P. Paul and Stuart T. Schwab	SwRI
6,813,960	11/9/2004	Asymmetrical Column Assembly for High-Cycle Fatigue Test	Thomas E. Owen, David L. Davidson, John B. Campbell, Andrew Nagy	SwRI
6,810,277	10/26/2004	Method, Apparatus and System for Removing Motion Artifacts from Measurements of Bodily Parameters	Reuben W. Edgar Jr., August J. Allo Jr., Paul B. Gunneson, Jesus D. Martin, John R. DelFavero, Michael B. Jaffe	Sponsored
6,804,610	10/12/2004	Indirect Measurement of Nitrogen in a Multi-Component Gas by Measuring the Speed of Sound at Two States of the Gas	Thomas B. Morrow, Kendricks A. Behring II	SwRI
6,802,262	10/12/2004	Tetherless Neuromuscular Disrupter Gun with Liquid-Based Capacitor (Liquid Dielectric)	Thomas J. Warnagiris, Drew L. Goodlin	SwRI
6,802,261	10/12/2004	Tetherless Neuromuscular Disrupter Gun with Liquid-Based Capacitor (Spray Discharge)	Thomas J. Warnagiris, Drew L. Goodlin	SwRI
6,799,587	10/5/2004	Apparatus for Contaminant Removal Using Natural Convection Flow and Changes in Solubility Concentrations by Temperature	Mary C. Marshall, John G. Franjione, Christopher J. Freitas, William T. Roberds, Gordon D. Pollard, Jill Blake	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
6,796,278	9/28/2004	Methods and Apparatuses for Laser Ignited Engines	Thomas W. Ryan III	SwRI
6,796,165	9/28/2004	Apparatus and Method for Real-Time Measurement of Mass, Size and Number of Solid Particles of Particulate Matter in Engine Exhaust	Imad Said Abdul-Khalek	SwRI
6,779,409	8/24/2004	Measurement of Torsional Dynamics of Rotating Shafts Using Magnetostrictive Sensors	Hegeon Kwun, Gary L. Burkhardt, Cecil M. Teller	SwRI
6,779,344	8/24/2004	Control System and Method for Turbocharged Throttled Engine	William Lyle Hartman, Donald Lee McCaw, Daniel James Podnar, John Thomas Kubesh	Sponsored
6,775,625	8/10/2004	System and Method for Nondestructive Testing Simulation	Gary L. Burkhardt, Jay L. Fisher, Eric C. Peterson	SwRI
6,772,622	8/10/2004	Disbonded Coating Cathodic Protection Monitoring Coupon	Oliver C. Moghissi, Darrell S. Dunn, Narasi Sridhar	SwRI
6,766,693	7/27/2004	Averaged Guided Wave Inspection Technology For Ribbon Cable	Glenn M. Light, Ali Minachi, Kevin M. Carpenter	SwRI
6,764,714	7/20/2004	Method for Depositing Coatings on the Interior Surfaces of Tubular Walls	Ronghua Wei, Christopher Rincon, James Arps	SwRI
6,756,141	6/29/2004	Three-Electrode Fuel Cell	Michael A. Miller, Craig M. Wall	SwRI
6,754,603	6/22/2004	Virtual Vehicle Transmission Test Cell	Marlin R. Turbett, Robert M. Senseney, Steven D. Nash, Michael R. Rosati, David T. Stark, Alfonso G. Hysko, Robert W. Tator, David L. Joseph, Paul A. Piorkowski, Gary L. Stecklein, Matthew S. Castiglione, Joe Steiber, Benjamin A. Treichel, Bapiraju Surampudi	Sponsored
6,754,592	6/22/2004	Indirect Measurement of Nitrogen in a Multi-Component Natural Gas by Heating the Gas	Thomas B. Morrow, Kendricks A. Behring II	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
6,744,893	6/1/2004	Receiver Estimation Engine for a Chaotic System	Arthur Fleming-Dahl	SwRI
6,743,936	6/1/2004	Composites Made Using Functionalized Nanoparticles	Stephen T. Wellinghoff, Hong Dixon, Henry R. Rawls, Barry K. Norling	SwRI and Board of Regents, The University of Texas
6,742,328	6/1/2004	Systems and Methods for Controlling Diesel Engine Emissions	Cynthia C. Webb, Patrick A. Weber, Magdi K. Khair	SwRI
6,723,177	4/20/2004	Life Extension of Chromium Coating and Chromium Alloys	Geoffrey Dearnaley, Kevin C. Walter	SwRI
6,718,861	4/13/2004	Momentum Trap Ballistic Armor System	Charlie E. Anderson Jr., Dennis L. Orphal, Gordon R. Johnson	SwRI
6,718,757	4/13/2004	Integrated Method for Controlling Diesel Engine Emissions in CRT-LNT System	Magdi K. Khair, Cynthia C. Webb, Gordon J. Bartley, Christopher A. Sharp	SwRI
6,708,666	3/23/2004	Multi-Zone Combustion Chamber for Combustion Rate Shaping and Emissions Control in Premixed-Charge Combustion Engines	Charles Edward Roberts Jr.	SwRI
6,706,344	3/16/2004	Controlled Fumigation of Wooden Structures	William W. Harlowe Jr., William A. McMahon, Donald J. Mangold, Bruce Bernstein	Sponsored
6,704,660	3/9/2004	System and Method to Determine Thermophysical Properties of a Multi-Component Gas at Arbitrary Temperature and Pressure	Thomas E. Morrow, Kendricks A. Behring II	SwRI
6,696,585	2/24/2004	Functionalized Nanoparticles	Stephen T. Wellinghoff, Hong Dixon, Henry R. Rawls, Barry K. Norling	SwRI and Sponsored
6,695,617	2/24/2004	Methods of Dental Repair Using Functionalized Nanoparticles	Stephen T. Wellinghoff, Hong Dixon, Henry R. Rawls, Barry K. Norling	SwRI
6,690,746	2/10/2004	Signal Recognizer for Communications Signals	James A. Sills, Q. Robert Black	SwRI
6,690,166	2/10/2004	Nuclear Magnetic Resonance Technology for Non-Invasive Characterization of Bone Porosity and Pore Size Distributions	Qingwen Ni, Xiaodu Wang and James D. King	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
6,683,463	1/27/2004	Sensor Array for Electrochemical Corrosion Monitoring	Lietai Yang, Narasi Sridhar	SwRI
6,683,311	1/27/2004	Deployable Particle Collector for Space Particle Instruments	Martin Peter Wüest	SwRI
6,679,224	1/20/2004	Method and Apparatus for Operating a Diesel Engine under Stoichiometric or Slightly Fuel-Rich Conditions	Rudolf H. Stanglmaier	SwRI
6,679,180	1/20/2004	Tetherless Neuromuscular Disrupter Gun with Liquid-Based Capacitor Projectile	Thomas J. Warnagiris, Drew L. Goodlin	SwRI
6,677,159	1/13/2004	Reversible Detector for Gaseous Carbon Dioxide	William A. Mallow	SwRI
6,672,387	1/6/2004	Oil and Gas Production with Downhole Separation and ReInjection of Gas	Jerry L. Brady, John M. Klein, Steven P. Petullo, Curtis G. Blount	Sponsored
6,662,775	12/16/2003	Integral Air Compressor for Boost Air in Barrel Engine	Bret R. Hauser	Sponsored
6,662,760	12/16/2003	Method and Apparatus for Controlling Combustion Timing in an Homogenous-Charge Compression-Ignition Engine	Rudolf H. Stanglmaier, Charles E. Roberts Jr., Daniel W. Stewart	SwRI
6,662,130	12/9/2003	Systems and Methods for Calibrating a Distorted Signal with Another Signal of Known Calibration	Harry Herbert Peel III, Keith Alan Bartels	Sponsored
6,656,135	12/2/2003	Passive and Wireless Displacement Measuring Device	Susan Zogbi, Larry D. Canady, Jerome A. Helffrich, Stephen A. Cerwin, Kevin S. Honeyager, Armando de los Santos, Christopher B. Catterson	SwRI
6,647,287	11/11/2003	Dynamic Cardiovascular Monitor	Harry Herbert Peel III, Eiichi Inada, Masayuki Shinoda, Franklin Tiffany Dodge, Xiao Zhao	Sponsored
6,637,381	10/28/2003	Oxygenated Fuel Plus Water Injection for Emissions Control in Compression Ignition Engines	Rudolf H. Stanglmaier, Daniel W. (Dickey) Stewart	SwRI
6,624,628	9/23/2003	Method and Apparatus Generating and Detecting Torsional Waves for Long Range Inspection of Pipes and Tubes	Hegeon Kwun, Sang-Young Kim, Alfred E. Crouch	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
6,615,580	9/9/2003	Integrated System for Controlling Diesel Engine Emissions	Magdi K. Khair, Cynthia C. Webb, Gordon J. Bartley, Christopher A. Sharp	SwRI
6,611,794	8/26/2003	Signal Amplitude Restoration Apparatus and Method	Arthur Fleming-Dahl	SwRI
6,610,436	8/26/2003	Catalytic Coatings and Fuel Cell Electrodes and Membrane Electrode Assemblies Made Therefrom	Geoffrey Dearnaley, James H. Arps	SwRI Assigned
6,609,680	8/26/2003	High Altitude Airships	William D. Perry, Thomas H. Jaeckle, Allan B. Black, Lawrence E. Epley	SwRI
6,608,714	8/19/2003	Bi-Directional , Single Material Thermal Actuator	Heather S. Hanson, Joseph N. Mitchell	SwRI
6,607,163	8/19/2003	Autonomous Stratospheric Airship	William D. Perry, Thomas H. Jaeckle, Lawrence E. Epley, Allan B. Black	SwRI
6,605,304	8/12/2003	Silicate-Containing Powders Providing Controlled, Sustained Gas Release	Stephen T. Wellinghoff, Joel J. Kampa, Sumner A. Barenberg, Peter N. Gray, Michael D. Lelah	Sponsored
6,604,051	8/5/2003	Systems and Method to Determine Thermophysical Properties of a Multi-Component Gas	Thomas B. Morrow, Kendricks A. Behring, II	SwRI
6,601,456	8/5/2003	Fretting Fixture for High-Cycle Fatigue Test Machine	David L. Davidson, Thomas E. Owen, John B. Campbell	SwRI
6,599,337	7/29/2003	Selection of Materials to Test for and/or Remove Drag Reducer Additive in Liquid Hydrocarbon Fuels	John Andrew Waynick	SwRI
6,595,102	7/22/2003	Reactive Personnel Protection System and Method	Thomas J. Warnagiris, David J. Stevens, Kirk A. Marchand	SwRI
6,587,612	7/1/2003	Thermally Actuated Spectroscopic Optical Switch	Joseph N. Mitchell, Martin Peter Wüest	SwRI
6,586,745	7/1/2003	Ultraviolet Target Designator and Methodology	Ralph H. Hill Jr., James R. Keys Jr.	SwRI
6,581,014	6/17/2003	Apparatus and Method for Analysis of Guided Ultrasonic Waves	James A. Sills, Christian J. Schwartz	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
6,577,697	6/10/2003	Samples Using Delayed Neutron Activation Analysis	English C. Percy, Mark S. Jarzempa, James R. Weldy	SwRI
6,573,715	6/3/2003	Porosity and Permeability Measurement of Underground Formations Containing Crude Oil, Using EPR Response Data	James D. King, Qingwen Ni, Armando De Los Santos	SwRI
6,571,611	6/3/2003	High Temperature Diesel Fuel Test Apparatus and Method	Paul Lacey, Jose De La Cruz, Eliazar H. Saucedo, Jack R. Compton	SwRI
6,570,543	5/27/2003	Conformal, High-Frequency, Direction-Finding Antenna	Ruell F. Solberg Jr., Steven P. Saulnier, C. Nils Smith, William G. Guion	SwRI
6,565,913	5/20/2003	Non-Irritating Antimicrobial Coatings and Process for Preparing Same	James Arps, Geoffrey Dearnaley	SwRI
6,557,520	5/6/2003	Multi-Zone Combustion Chamber and Method for Combustion Control in Compression-Ignited Reciprocating Engines	Charles E. Roberts Jr.	SwRI
6,553,319	4/29/2003	Unattended Liquid Sample Monitoring and Liquid Sample Storage System	Jerome A. Helffrich, William G. McBride Jr.	SwRI
6,546,782	5/15/2003	High Temperature Pressurized High Frequency Testing Rig and Test Method	Jose De la Cruz, Paul Lacey	SwRI
6,543,398	4/8/2003	High Efficiency Compression Ignition Aftertreatment Devices for Combined Use of Lean-Burn Combustion Systems and Three-Way Catalysts	Charles Edward Roberts Jr., Rudolf Hermann Stanglmaier	SwRI
6,536,392	3/25/2003	Method and Apparatus for Starting an Internal Combustion Engine	Stanley K. Widener	SwRI
6,519,486	2/11/2003	Method, Apparatus and System for Removing Motion Artifacts from Measurements of Bodily Parameters	Reuben W. Edgar Jr., August J. Allo Jr., Paul B. Gunneson, Jesus D. Martin, John R. DelFavero, Michael B. Jaffe	Sponsored
6,514,565	2/4/2003	Method for Producing a Lubricious Amorphous Carbon Film	Geoffrey Dearnaley, Mark Van Dyke	SwRI
6,495,819	12/17/2002	Dual-Interferometer Method for Measuring Bending of Materials	Stephen A. Cerwin, David B. Chang	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
6,494,192	12/17/2002	On-Board Fuel Vapor Collection, Condensation, Storage and Distribution System for a Vehicle	William K. Capshaw, John C. Hedrick, David W. Naegeli, Michael G. Ross	SwRI
6,488,727	12/2/2002	Method for Producing Oxygenated Fuels	David W. Naegeli, Kenneth H. Childress, David S. Moulton, Paul I. Lacey	SwRI
6,482,377	11/19/2002	Method for Bypassing Sulfur Dioxide Around an Aftertreatment Device in an Exhaust Gas Aftertreatment System	Gordon James J. Bartlet, Magdi K. Khair	SwRI
6,480,111	11/12/2002	Motion Detection for Physiological Applications	Larry D. Canady, Kevin S. Honeyager, Jerome A. Helffrich, David A. Tong	SwRI
6,474,213	11/5/2002	Reactive Stiffening Armor System	James D. Walker, Dennis L. Orphal	SwRI
6,467,257	10/22/2002	System for Reducing the Nitrogen Oxide (NOx) and Particulate Matter(PM) Emissions from Internal Combustion Engines	Magdi Khair, William D. DiSilverio, James E. Dittmar	SwRI
6,463,202	10/8/2002	Optimization of Curved Waveguide Design to Reduce Transmission Losses	Stephen A. Cerwin, David B. Chang	SwRI
6,460,491	10/8/2002	Method of Water/Fuel Co-Injection for Emissions Control During Transient Operating Conditions of a Diesel Engine	Rudolf H. Stanglmaier, Daniel W. Stewart (formerly Daniel W. Dickey)	SwRI
6,453,264	9/17/2002	Surface Flaw Detection Using Spatial Raman-Based Imaging	John Francis Maguire, John David Busbee, Steven R. LeClair	SwRI
6,451,377	9/17/2002	Methods for Making High Temperature Coatings from Precursor Polymersto Refractory Metal Carbides and Metal Borides	Partha P. Paul, Stuart T. Schwab	SwRI
6,443,104	9/3/2002	Engine and Method for Controlling Homogenous Charge CompressionIgnition Combustion in a Diesel Engine	Stefan Simescu, Thomas W. Ryan III, Daniel W. Stewart (formerly Daniel W. Dickey)	SwRI
6,442,495	8/27/2002	Average Signal to Noise Ratio Estimator	Arthur Fleming-Dahl	SwRI
6,429,650	8/6/2002	Method and Apparatus Generating and Detecting Torsional Wave Inspection of Pipes or Tubes	Hegeon Kwun, Sang-Young Kim, James F. Crane	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
6,426,503	7/30/2002	Opto-Electronic Ultra-Violet Radiation Dosimeter	Martin P. Wuest	SwRI
6,424,150	7/23/2002	Magnetostrictive Sensor Rail Inspection System	Hegeon Kwun, Glenn M. Light	SwRI
6,417,244	7/9/2002	Metal Oxide Compositions and Methods	Stephen T. Wellinghoff, Hong Dixon, Henry R. Rawls, Barry K. Norling	SwRI and Sponsored
6,412,391	7/2/2002	Reactive Personnel Protection System and Method	David J. Stevens, Kirk A. Marchand, Thomas J. Warnagiris	SwRI
6,411,328	6/25/2002	Method and Apparatus for Traffic Incident Detection	Ernest A. Franke, Ernest S. Kinkler, Michael J. Magee, Steven B. Seida	SwRI
6,410,765	6/25/2002	Methods of Making Functionalized Nanoparticles	Stephen T. Wellinghoff, Hong Dixon, Henry R. Rawls, Barry K. Norling	SwRI
6,410,144	6/25/2002	Lubricious Diamond-Like Carbon Coatings	Geoffrey Dearnaley, Mark Van Dyke	SwRI
6,396,262	5/28/2002	Method and Apparatus for Short Term Inspection or Long Term Structural Health Monitoring	Glenn M. Light, Hegeon Kwun, Sang-Young Kim, Robert L.Spinks, Jr.	SwRI
6,395,840	5/28/2002	Precursor Polymers to Refractory Metal Carbides and Metal Borides	Partha P. Paul, Stuart T. Schwab	SwRI
6,394,953	5/28/2002	Electrode Array System for Measuring Electrophysiological Signals	Philip H. Devlin, Rafael M. Cordero, Nassib G. Chamoun, John R. Shambroom, Charles Fendrock, Terrie L. McDaniel	Sponsored
6,393,311	5/21/2002	Method, Apparatus and System for Removing Motion Artifacts from Measurements of Bodily Parameters	Reuben W. Edgar Jr., August J. Allo Jr., Jesus D. Martin, John R. DelFavero, Michael B. Jaffe	Sponsored
6,386,480	5/14/2002	Autonomous Stratospheric Airship	William D. Perry, Thomas H. Jaeckle, Lawrence E. Epley, Allan B. Black	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
6,382,032	5/7/2002	Apparatus and Method for Measuring Flow of Gas with Entrained Liquids	Gregory J. Hatton, Steven J. Svedeman	SwRI
6,378,489	4/30/2002	Method for Controlling Compression Ignition Combustion	Rudolph H. Stanglmaier, Charles E. Roberts, Jr., Daniel W. Stewart (formerly Daniel W. Dickey), Thomas W. Ryan, III, Jeffrey A. Leet, Lee G. Dodge, Matthew E. Schulman	SwRI
6,376,022	4/23/2002	Protective Coating and Method	William A. Mallow, Clifford A. Moses, Henry L. Bernstein	SwRI
6,373,245	4/16/2002	Method for Inspecting Electric Resistance Welds Using Magnetostrictive Sensors	Hegeon Kwun, Sang-Young Kim	SwRI
6,370,946	4/16/2002	High Temperature Diesel Deposit Tester	Paul Lacey, Jose De La Cruz, Eliazar H. Saucedo, Jack Russell Compton	SwRI
6,367,491	4/9/2002	Apparatus for Contaminant Removal Using Natural Convection Flow and Changes in Solubility Concentration by Temperature	Mary C. Marshall, John G. Franjione, Christopher J. Freitas	SwRI
6,361,567	3/26/2002	Non-Irritating Antimicrobial Coating for Medical Implants and a Process for Preparing Same	Geoffrey Dearnaley	SwRI
6,354,535	3/12/2002	Autonomous Stratospheric Airship	William D. Perry, Thomas H. Jaeckle, Lawrence E. Epley, Allan B. Black	SwRI
6,348,177	2/19/2002	Apparatus and Method for Bypassing Sulfur Dioxide Around an Aftreatment Device in an Exhaust Gas Aftreatment System	Gordon Bartley, Magdi Khair	SwRI
6,340,360	1/22/2002	System for Cell Growth	Mark B. Lyles, Charles A. McLaughlin, Glenn A. Half, William A. Mallow	Sponsored
6,339,409	1/15/2002	Wide Bandwidth Multi-Mode Antenna	Thomas J. Warnagiris	SwRI
6,333,052	12/25/2001	Medicaments for Beneficial Insects and Method	Sherrene D. Kevan, Peter G. Kevan, Jack D. Trevino	Sponsored

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
6,330,517	12/11/2001	Interface for Managing Process	Patrick Dobrowski, Jon Westbrook, Kenneth L. Holladay	Sponsored
6,318,309	11/20/2001	Opposed Piston Engine with Reserve Power Capacity	Robert W. Burrahm, John C. Hedrick	SwRI
6,300,000	10/9/2001	Fuel Cell Membrane Electrode Assemblies with Improved Power Outputs and Poison Resistance	Carlos A. Cavalca, James H. Arps, Mahesh Murthy	Sponsored
6,298,787	10/9/2001	Non-Lethal Kinetic Energy Weapon System and Method	Thomas J. Warnagiris	SwRI
6,298,729	10/9/2001	Catalytic Converter Testing	Robert J. Locker, Constance B. Sawyer, Douglas J. Fox, James F. Unruh	Sponsored
6,295,677	10/2/2001	Method for Inspecting Liquid Filled Pipes Using Magnetostrictive Sensors	Hegeon Kwun, Keith A. Bartels	SwRI
6,294,912	9/25/2001	Method and Apparatus for Nondestructive Inspection of Plate Type Ferromagnetic Structures Using Magnetostrictive Sensors	Hegeon Kwun	SwRI
6,293,096	9/25/2001	Multiple Stage Aftertreatment System	Magdi K. Khair, Charles T. Hare	SwRI
6,291,537	9/18/2001	Encapsulation of Oxidants for Pitch Stabilization	David L. Ciminelli, Partha P. Paul, Niraj Vasishtha	Sponsored
6,287,717	9/11/2001	Fuel Cell Membrane Electrode Assemblies with Improved Power Outputs	Carlos A. Cavalca, James H. Arps	Sponsored
6,284,158	9/4/2001	Pumpable Heat Transfer Composition	Mary C. Marshall, Herman W. Schlameus, Richard J. Mannheimer	SwRI
6,283,228	9/4/2001	Method for Preserving Core Sample Integrity	Pierre E. Collee, Steven R. Radford, William A. Mallow, Dorothy P. Enright	Sponsored
6,280,509	8/28/2001	Biocidal Coating Compositions and Method	William A. Mallow	Sponsored
6,279,449	8/28/2001	Rapid Deployment Countermeasure System and Method	Michael D. Ladika, Geoffrey Dearnaley	SwRI
6,277,408	8/21/2001	Silicte-Containing Powders Providing Controlled,	Stephen T. Wellinghoff,	SwRI and

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
		Sustained Gas Release	Joel J. Kampa, Sumner A. Barenberg, Peter N. Gray	Sponsored
6,268,727	7/31/2001	Measurement of Flow Fractions, Flow Velocities, and Flow Rates of a Multiphase Fluid Using ESR Sensing	J. Derwin King, Qingwen Ni, Armando De Los Santos	SwRI
6,268,666	7/31/2001	Bi-Directional Power Conversion Apparatus for Combination of Energy Sources	Shibashis Bhowmik	SwRI
6,267,017	7/31/2001	Two-Dimensional Array for Electromechanical and Electrochemical Spectroscopy	Michael A. Miller, Stephen J. Hudak, Jr.	SwRI
6,260,619	7/17/2001	Oil and Gas Production with Downhole Separation and Compression of Gas	Steven J. Svedeman, Steven P. Petullo, John M. Klein, James L. Cawvey, Jerry L. Brady, Mark D. Stevenson	Sponsored
6,258,974	7/10/2001	Metal Oxide Compositions, Composites Thereof and Method	Stephen T. Wellinghoff, Hong Dixon, Henry R. Rawls, Barry K. Norling	SwRI
6,252,433	6/26/2001	Single Event Upset Immune Comparator	Toby James Stecklein	SwRI
6,249,261	6/19/2001	Polymer, Composite, Direction-Finding Antenna	Ruell F. Solberg, Jr., Dayle D. Winnie, Steven P. Saulnier, Charles K. Baker, Patrick J. Siemsen, Charles H. Parr	SwRI
6,244,044	6/12/2001	Method for Reducing Cold-Start Hydrocarbon Emissions in a Gasoline, Natural Gas, or Propane Fuel Engine	Gordon J. Bartley	SwRI
6,240,912	6/5/2001	Method for In-Cylinder Catalytic Oxidation of Hydrocarbons in Direct Injected Spark Ignition Engines	Rudolph H. Stanglmaier, Charles E. Roberts	SwRI
6,239,593	5/29/2001	Method and System for Detecting and Characterizing Mechanical Damage in Pipelines Using Nonlinear Harmonics Techniques	Gary L. Burkhardt, Alfred E. Crouch	SwRI
6,235,352	5/22/2001	Method of Repairing a Thermal Barrier Coating	Gerald R. Leverant, Narayana S. Cheruvu, Partha P. Paul, Stuart T. Schwab	Sponsored

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
6,231,650	5/15/2001	Biocidal Coating Composition	William A. Mallow, Bryan C.G. Glenson, Larry Rogers	Sponsored
6,227,174	5/8/2001	Plunger-Activated Unit Injector for Internal Combustion Engines	John C. Hedrick, Robert W. Burrahm	SwRI
6,212,944	4/10/2001	Apparatus and Method for Monitoring Engine Conditions Using Magnetostrictive Sensors	Hegeon Kwun, Cecil M. Teller, Roy C. Meyer, Kendall R. Swenson	SwRI
6,205,859	3/27/2001	Method for Improving Defect Detectability with Magnetostrictive Sensors for Piping Inspection	Hegeon Kwun, Keith A. Bartels	SwRI
6,201,391	3/13/2001	Nonlinear Harmonics Method and System for Measuring Degradation in Protective Coatings	Gary L. Burkhardt, Hegeon Kwun	SwRI
6,200,649	3/13/2001	Method of Making Titanium Boronitride Coatings Using Ion Beam Assisted Deposition	Geoffrey Dearnaley	SwRI
6,194,481	2/27/2001	Mechanically Strong and Transparent or Translucent Composites Made Using Zirconium Oxide Nanoparticles	Benjamin R. Furman, Stephen T. Wellinghoff, Henry R. Rawls, Hong Dixon, Barry K. Norling	SwRI and Sponsored
6,174,538	1/16/2001	Bait with Cucurbitacin	Keith L. Branly, James M. Gaggero, Chel W. Lew, Cathy S. Lamb	Sponsored
6,171,343	1/9/2001	Ultra High Molecular Weight Polyethylene Components Treated to Resist Shearing and Frictional Wear	Geoffrey Dearnaley, James Lankford, Jr.	SwRI
6,169,931	1/2/2001	Method and System for Modeling, Predicting, and Optimizing Chemical Mechanical Polishing Pad Wear and Extending Pad Life	Scott R. Runnels	SwRI
6,165,282	12/26/2000	Method for Contaminant Removal Using Natural Convection Flow and Changes in Solubility Concentration by Temperature	Mary C. Marshall, John G. Franjione, Christopher J. Freitas	SwRI
6,159,533	12/12/2000	Method of Depositing a Catalyst on a Fuel Cell Electrode	Geoffrey Dearnaley, James Arps	SwRI Assigned
6,157,896	12/5/2000	Geolocation Communications Method During Visibility Between an Earth-Orbit Satellite and a Transmitter and Receiver	M. Pike Castles, Austin Walker Boyd, Jr., James Andrew Moryl	SwRI
6,153,327	11/28/2000	Amorphous Carbon Comprising a Catalyst	Geoffrey Dearnaley, James Arps	SponsoredSwRI Assigned

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
6,151,969	11/28/2000	Electromechanical and Electrochemical Impedance Spectroscopy for Measuring and Imaging Fatigue Damage	Michael A. Miller, Stephen J. Hudak Jr.	SwRI
6,147,929	11/14/2000	Method for Predicting Continuous and Discontinuous Waveguide Targets Using Interwell Seismic Signature Characteristics	Jorge Parra	Sponsored
6,147,644	11/14/2000	Autonomous Geolocation and Message Communication System and Method	M. Pike Castles, Austin Walker Body Jr., James Andrew Moryl	SwRI
6,146,482	11/14/2000	Method for Designing High Pressure Low Cost Prestressed Composite Wrapped Transmission Line System	Edward Matthew Patton, Timothy Stewart Rennick, Carl Harry Popelar	SwRI
6,143,141	11/7/2000	Method of Forming a Diffusion Barrier for Overlay Coatings	Gerald R. Leverant, James Arps, John Campbell, Richard Page	SwRI
6,138,649	10/31/2000	Fast Acting Exhaust Gas Recirculation System	Magdi K. Khair, Christopher A. Sharp	SwRI
6,135,627	10/24/2000	Method, Apparatus, and Article of Manufacture for Modeling Eddy Current Probes and Simulating Eddy Current Examinations	Robert E. Beissner, Edith A. Creek	SwRI
6,134,947	10/24/2000	Load Sensor for Measuring Engine Cylinder Pressure and Seat Occupant Weight	Hegeon Kwun	SwRI
6,131,631	10/17/2000	Press Plug Support for the Inflation System	John Allen Bradley, Mark Kevin Hennig	Sponsored
6,120,840	9/19/2000	Method for Making Ceramic Matrix Composites Using Precursor Polymers to Refractory Metal Carbides and Metal Borides	Partha P. Paul, Stuart T. Schwab	SwRI
6,111,501	8/29/2000	Hand-Held Environmental Monitor	Kevin S. Honeyager, Terrie L. McDaniel, Larry D. Canady	SwRI
6,110,066	8/29/2000	Parallel Hybrid Drivetrain	Ashok Nedungadi, Mark Walls, D. Dardalis	SwRI
6,087,025	7/11/2000	Application of Diamond-Like Carbon Coatings to Cutting Surfaces of Metal Cutting Tools	Geoffrey Dearnaley, James Lankford, James H. Arps	SwRI
6,063,517	5/16/2000	Spiral Wrapped Cylindrical Proton Exchange	Alan Montemayor,	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
		Membrane Fuel Cells and Methods of Making Same	Edward A. Bass, Michael Stewart, Narasi Sridhar	
6,063,312	5/16/2000	Method of Increasing the Relative Heat Capacity of a Pumpable Dielectric Heat Transfer Carrier Liquid	Richard J. Mannheimer	SwRI
6,062,178	5/16/2000	Method of Operating Uni-Flow Two-Cycle Engine During Reduced Load Conditions	David P. Meyers, John C. Hedrick, Gary D. Bourn, John T. Kubesh, Kevin D. Beaty, Robert W. Burrahm	SwRI
6,056,992	5/2/2000	Encapsulated Additives	Chel W. Lew	Sponsored
6,053,736	4/25/2000	Interactive Training System for AWACS Weapons Directors	Stephen D. Huffman, Bruce C. Montag, Sharon D. Long	SwRI
6,046,587	4/4/2000	Measurement of Flow Fractions, Flow Velocities, and Flow Rates of a Multiphase Fluid Using NMR Sensing	J. Derwin King, Qingwen Ni, Armando De Los Santos	SwRI
6,046,243	4/4/2000	Compositions for Sustained Release of a Gas	Stephen T. Wellinghoff, Sumner A. Barenberg, Joel J. Kampa, Darren E. Barlow	Sponsored
6,042,896	3/28/2000	Preventing Radioactive Contamination of Porous Surfaces	L. Rodriguez, G. Dearnaley	SwRI
6,042,883	3/28/2000	Methods for Making High Temperature Coatings from Precursor Polymers to Refractory Metal Carbides and Metal Borides	Partha P. Paul, Stuart T. Schwab	SwRI
6,042,638	3/28/2000	Biocidal Coating Composition	William A. Mallow, Bryan C.G. Glenson, L. Rogers	Sponsored
6,041,602	3/28/2000	Hydraulically-Actuated Exhaust Gas Recirculation System and Turbocharger for Engines	Daniel W. Stewart (formerly Daniel W. Dickey)	SwRI
6,038,525	3/14/2000	Process Control for Pulsed Laser Deposition Using Raman Spectroscopy	John Francis Maguire, John David Busbee, David Charles Liptak, David Peter Lubbers, Steven R. LeClair, Rand Robert Biggers	SwRI
6,032,064	2/29/2000	Electrode Array System for Measuring Electrophysiological Signals	Philip H. Devlin, Rafael M. Cordero,	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
			Nassib G. Chamoun, John R. Shambroom, Charles Fendrock, Terrie L. McDaniel	
6,029,558	2/29/2000	Reactive Personnel Protection System	David J. Stevens, Kirk A. Marchand, Thomas J. Warnagiris	SwRI
6,029,558	3/20/2007	Reactive Personnel Protection System	David J. Stevens, Kirk A. Marchand, Thomas J. Warnagiris	SwRI
6,023,980	2/15/2000	High-Cycle Fatigue Test Machine	Thomas E. Owen, David L. Davidson, Andrew Nagy	SwRI
6,016,711	2/25/2000	Motor Vehicle Emissions Sampling System	Terry L. Ullman, Cynthia Webb	SwRI
6,007,491	12/28/1999	Cardiac Output Monitor Using Fuzzy Logic Blood Pressure Analysis	Jian Ling, Dean Winter, Brian Robey	SwRI
6,005,028	12/21/1999	Organic-Inorganic Hybrid Composites for Dental Restorative Material	Partha P. Paul	SwRI
6,004,412	12/21/1999	Method and System for Repairing a Damaged Plastic Pipe	Stephen Cecil Grigory, Glen William Deel, Jesse Abergo Villarreal, Rolf Glauser	Sponsored
6,001,500	12/14/1999	Cylindrical Proton Exchange Membrane Fuel Cells and Methods of Making Same	Edward Bass, Patrick Merritt, Christopher Sharp, Craig Wall, John Campbell	SwRI
6,001,481	12/14/1999	Porous Anodized Aluminum Surfaces Sealed with Diamond-Like Carbon Coatings	Geoffrey Dearnaley, Stephen J. Lukezich	SwRI
6,000,660	12/14/1999	Rotary Beam Variable Stiffness Wing Spar	Kenneth E. Griffin, Robert P. Guillot, Damin J. Siler	SwRI
6,000,288	12/14/1999	Determining Average Wall Thickness and Wall-Thickness Variation of a Liquid-Carrying Pipe	Hegeon Kwun, Keith A. Bartels	SwRI
6,000,277	12/14/1999	Method for the Prediction of Rupture in Corroded Transmission Pipes Subjected to Combined Loads	Marina Q. Smith, Weu Wang, Carl H. Popelar, James Alan Maple	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
5,990,039	11/23/1999	Metal Complex Derived Catalyst and Method of Forming	Partha P. Paul, Stuart T. Schwab	SwRI
5,984,905	11/16/1999	Non-Irritating Antimicrobial Coating for Medical Implants and a Process for Preparing Same	Geoffrey Dearnaley	SwRI
5,984,874	11/16/1999	Pressure and Temperature Sensor Transducer Array	Stephen A. Cerwin	SwRI
5,980,826	11/9/1999	Methods of Deodorizing and Retarding Contamination or Mold Growth Using Chlorine Dioxide	Stephen T. Wellinghoff, Sumner A. Barenberg, Peter N. Gray	SwRI
5,980,699	11/9/1999	Method for Preparing Silicon Nitride and Silicon Nitride Composites	Scott F. Timmons, Renee C. Graef, Stuart T. Schwab, Montgomery D. Grimes	SwRI
5,976,711	11/2/1999	Bearing Surfaces of Hypereutectic Alloys Modified to Increase Lubricant Effectiveness	Geoffrey Dearnaley	SwRI
5,976,244	11/2/1999	Fixation of Hazardous Wastes and Related Products	William A. Mallow	SwRI
5,970,434	10/19/1999	Method for Determining Average Wall Thickness for Pipes and Tubes Using Guided Waves	Joseph W. Brophy, Hegeon Kwun	SwRI
5,964,745	10/12/1999	Implantable System for Cell Growth Control	Mark B. Lyles, Charles A. McLaughlin, Glenn A. Half, Jr., William A. Mallow	Sponsored
5,962,850	10/5/1999	Large Aperture Particle Detector with Integrated Antenna	Martin Peter Wuest	SwRI
5,959,073	9/28/1999	Method for Preparing Polymeric Beads	Herman Wade Schlameus, Darren Eugene Barlow	SwRI
5,954,095	9/21/1999	Apparatus and Method for Sealing a Damaged Pipe	Stephen Cecil Grigory, Jess Aberg Villarreal, Jeffrey Gene Wright, Donald Wade Johnson	Sponsored
5,948,171	9/7/1999	Electrohydraulic Transducer for Cleaning the Inner Surface of Pipes	Michael G. Grothaus	SwRI
5,947,063	9/7/1999	Stoichiometric Synthesis, Exhaust, and Natural-Gas Combustion Engine	Jack A. Smith, Daniel J. Podnar, James J. Cole, John T. Kubesh, Gordon J. Bartley	SwRI
5,945,558	8/31/1999	Method of Making Amino Acid Acrylic Monoesters	William A. Mallow	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
5,945,153	8/31/1999	Non-Irritating Antimicrobial Coating for Medical Implants and a Process for Preparing Same	Geoffrey Dearnaley	SwRI
5,939,356	8/17/1999	Controlled Release Coated Agricultural Products	Stephen T. Wellinghoff	SwRI
5,931,790	8/3/1999	System and Method for Accurately Monitoring the Cardiovascular State of a Living Subject	Harry H. Peel, III	Sponsored
5,927,075	7/27/1999	Method and Apparatus for Exhaust Gas Recirculation Control and Power Augmentation in an Internal Combustion Engine	Magdi K. Khair	Sponsored
5,926,401	7/20/1999	Weather Effects Generator for Simulation Systems	Bruce C. Montag, Dennis J. Wenzel, Richard P. Weyrauch	SwRI
5,925,370	7/20/1999	Biorepellant Matrix Coating	David M. Bullat, Niraj Vasishtha	U.S. Secretary of the Navy
5,922,776	7/13/1999	Sustained Release, Transparent Biocidal Coatings	Stephen T. Wellinghoff, Joel J. Kampa, Sumner A. Barenberg	Sponsored
5,922,415	7/13/1999	Lubrication of Magnetic Disk Storage Media	Geoffrey Dearnaley, James Arps	SwRI
5,920,976	7/13/1999	Apparatus and Method for Remotely Sealing a Damaged Pipe	Stephen Cecil Grigory, Jesse Abergo Villarreal, Jeffrey Gene Wright, Donald Wade Johnson	Sponsored
5,920,492	7/6/1999	Display List Generator for Fire Simulation Display	Bruce C. Montag, Stephen D. Huffman, Denise C. Varner	SwRI
5,914,120	6/22/1999	Amine-Containing Biocidal Compositions Containing a Stabilized Chlorite Source	Stephen T. Wellinghoff, Joel J. Kampa	SwRI
5,902,964	5/11/1999	Measurement of Mass Using Simple Harmonic Motion with Active Spring and Active Damping	Ruell Floyd Solberg, Jr., H. Stanley Silvus	SwRI
5,900,590	5/4/1999	Centrifugal Measurement of Mass	Ruell Floyd Solberg, Jr., Richard Lorenz	SwRI
5,895,439	4/20/1999	Method for Generating and Displaying Complex Data Derived from Non-Destructive Evaluation Scanning	Jay L. Fisher, Keith S. Pickens	SwRI
5,895,359	4/20/1999	System and Method for Correcting a Living Subject's Measured Blood Pressure	H. Herbert Peel III	Sponsored

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
5,892,162	4/6/1999	Apparatus and Method for Inspection of Pipes and Tubes Using Guided Wave Probe	Robert L. Spinks, Joseph W. Brophy, Ronald H. Peterson	SwRI
5,890,459	4/6/1999	System and Method for a Dual Fuel, Direct Injection Combustion Engine	John C. Hedrick, Gary Bourn	SwRI
5,888,528	3/30/1999	Sustained Release Biocidal Composition	Stephen T. Wellinghoff, Sumner A. Barenberg, Hong Dixon, Joel J. Kampa,	Sponsored
5,880,378	3/9/1999	Critical Flow Venturi With Variable and Continuous Range	Kendricks A. Behring, II	SwRI
5,875,743	3/2/1999	Apparatus and Method for Reducing Emissions in a Dual Combustion Mose Diesel Engine	Daniel W. Stewart (formerly Daniel W. Dickey)	SwRI
5,868,881	2/9/1999	Rotary Air Coupling for Tire Inflation System	John Allen Bradley	Sponsored
5,868,176	2/9/1999	System for Controlling the Fill of Compressed Natural Gas Cylinders	Andre M. Barajas, John C. Buckingham, Steven Svedeman	Sponsored
5,865,756	2/2/1999	System and Method for Identifying and Correcting Abnormal Oscillometric Pulse Waves	Harry H. Peel, III	Sponsored
5,863,621	1/26/1999	Non-Chromate Sealant for Porous Anodized Aluminum	Geoffrey Dearnaley, Stephen J. Lukezich	SwRI
5,863,492	1/26/1999	Ternary Heavy Alloy Based On Tungsten-Nickel-Manganese	Animesh Bose	SwRI
5,861,701	1/19/1999	Charged-Particle Powered Battery	Robert D. Young, John P. Hageman, Glenn M. Light, Stephen W. Seale, Jr.	SwRI
5,850,285	12/18/1998	Advanced Missile Approach Warning System (AMAWS) and Stealth (Low Observables) Detection Based On Exploitation of Quantum Effects	Ralph H. Hill Jr., James R. Keys	SwRI
5,846,836	12/8/1998	Reversible Detector for Gaseous Carbon Dioxide	William A. Mallow	SwRI
5,842,524	12/1/1998	Shrink-Wrap Fire Extinguishing Method and Container	Kent R. Farmer	SwRI
5,836,289	11/17/1998	Porous Element Fuel Vaporizer	Robert H. Thring	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
5,833,940	11/10/1998	Production of Soluble Silicates From Biogenetic Silica	William A. Mallow, Roy S. Reiber, Jesse R. Conner	Sponsored
5,832,880	11/10/1998	Apparatus and Method for Controlling Homogenous Charge Compression Ignition Combustion in Diesel Engines	Daniel W. Stewart (formerly Daniel W. Dickey)	SwRI
5,831,424	11/3/1998	Isolated Current Sensor	Poul A. Jensen	SwRI
5,823,159	10/20/1998	Independent Valve Train Lubrication System	Susumu Ariga	SwRI
5,821,430	10/13/1998	Method and Apparatus for Conducting In-Situ Nondestructive Tensile Load Measurements in Cables and Ropes	Hegeon Kwun, Keith Bartels, John J. Hanley	SwRI
5,810,595	9/22/1998	Dental Repair Composition and Method	William A. Mallow	SwRI
5,806,308	9/15/1998	Exhaust Gas Recirculation System for Simultaneously Reducing NOx and Particulate Matter	Magdi K. Khair, William D. Di Silverio	SwRI
5,799,436	9/1/1998	Apparatus for Attracting and Destroying Insects	James A. Nolen, William Mallow	Sponsored
5,798,428	8/25/1998	Method of Preparing Polysilanes and Resultant Products	Stuart T. Schwab, Partha Paul, Ryoichi Nishida	Sponsored
5,795,672	8/18/1998	Diamond-Like Carbon Based Electrocatalytic Coating for Fuel Cell Electrodes	Geoffrey Dearnaley	SwRI Assigned
5,780,119	7/14/1998	Treatments To Reduce Friction and Wear on Metal Alloy Components	James Lankford, Geoffrey Dearnaley	SwRI
5,771,868	6/30/1998	Turbocharging Systems for Internal Combustion Engines	Magdi K. Khair,	Sponsored
5,771,683	6/30/1998	Active Porous Medium Aftertreatment Control System	Cynthia Chaffin Webb	SwRI
5,768,477	6/16/1998	Radio Direction Finding System for Narrowband Multiple Signals	Richard L. Johnson, William J. Montville	SwRI
5,767,766	6/16/1998	Apparatus and Method for Monitoring Vehicular Impacts Using Magnetostrictive Sensors	Hegeon Kwun,	SwRI
5,764,721	6/9/1998	Method for Obtaining Optimized Computed Tomography Images from a Body of High Length-To-Width Ratio Using Computer Aided Design Information For the Body	Glenn M. Light, Daniel Schneberk	SwRI/ Daniel Schneberk

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
5,763,106	6/9/1998	Composite Powder and Method For Forming A Self-Lubricating Composite Coating and Self-Lubricating Components Formed Thereby	Cheryl R. Blanchard, Richard Allen Page	Sponsored
5,759,904	6/2/1998	Suppression of Transient Enhanced Diffusion in Ion Implanted Silicon	Geoffrey Dearnaley	SwRI
5,754,143	5/19/1998	Switch-Tuned Meandered-Slot Antenna	Donald R. Bannon, Thomas J. Minardo, Thomas J. Warnagiris	SwRI
5,753,806	5/19/1998	Apparatus and Method for Determining The Distribution and Flow Rate Characteristics of an Injection Nozzle	Thomas W. Ryan, Kendall R. Swenson	SwRI
5,747,696	5/5/1998	Method of Non-Invasively Monitoring Pressure of a Compressed Gas In A Closed Container	Hegeon Kwun, Michael Allen Piskie, Tony Gioutsos	Sponsored
5,746,785	5/5/1998	Diesel Fuel Having Improved Qualities and Method of Forming	David S. Moulton, David Naegeli	SwRI
5,743,171	4/28/1998	Oil Control Ring and Groove Arrangement for Improved Blowby Control	Susumu Ariga	SwRI
5,740,785	4/21/1998	Two-Way High Pressure Loop, Exhaust Gas Recirculation Valve	Daniel W. Stewart (formerly Daniel W. Dickey), Evan S. Guy	SwRI
5,740,602	4/21/1998	Wire Harness Assembly System	Eric C. Peterson, Alex H. Damalas, Glynn R. Bartlett, Steven B. Farmer, Leslie B. Hoffman, Tak Kameoka, Horace H. Wacaser, Paul B. Wood	Sponsored
5,737,999	4/14/1998	Blowby Pressure Control Above an Oil Control Ring in a Reciprocating Internal Combustion Engine	Susumu Ariga	SwRI
5,735,905	4/7/1998	Shock Absorbing Element for a Load Bearing Prosthesis	Charles H. Parr	SwRI
5,735,245	4/7/1998	Method and Apparatus for Controlling Fuel/Air Mixture in a Lean Burn Engine	John Thomas Kubesh, Lee Gene Dodge, Daniel James Podnar	SwRI
5,731,045	3/24/1998	Application of Diamond-Like Carbon Coatings to Cobalt-Cemented Tungsten Carbide Components	Geoffrey Dearnaley, James Lankford, Jr.	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
5,726,907	3/10/1998	Biaxial Non-Contracting Strain Measurement Using Machine Vision	David L. Davidson, Steven B. Seida	SwRI
5,725,573	3/10/1998	Medical Implants Made of Metal Alloys Bearing Cohesive Diamond Like Carbon Coatings	Geoffrey Dearnaley, James Lankford, Jr.	SwRI
5,720,805	2/24/1998	Titanium-Tin-Oxide Nanoparticles, Compositions Utilizing the Same and Method of Forming the Same	Stephen T. Wellinghoff, Domnica Cernasov	SwRI
5,710,413	1/20/1998	H-Field Electromagnetic Heating System for Fusion Bonding	James D. King, Harold F. Donoho, Jr.	Sponsored
5,707,739	1/13/1998	Powdered Biocidal Compositions	Stephen T. Wellinghoff, Joel J. Kampa, Darren E. Barlow	SwRI
5,705,092	1/6/1998	Multilayered Biocidal Film Compositions	Stephen T. Wellinghoff, Joel J. Kampa,	SwRI
5,695,814	12/9/1997	Method of Making a Powdered Biocidal Composition	Stephen T. Wellinghoff, Joel J. Kampa, Darren E. Barlow	SwRI
5,693,874	12/2/1997	Test Apparatus and Method for Determining Deposit Formation Characteristics of Fuels	Jose L. De La Cruz, Ronald M. Estafan	SwRI
5,672,967	9/30/1997	Compact Tri-Axial Fluxgate Magnetometer and Housing with Unitary Orthogonal Sensor Substrate	John R. Scherrer, Poul A. Jensen	SwRI
5,672,812	9/30/1997	Sparkplug/Pressure Sensor Device	Roy C. Meyer	SwRI
5,670,583	9/23/1997	Metal Oxide-Polymer Composites	Stephen T. Wellinghoff	SwRI
5,668,185	9/16/1997	Method of Making an Amine Containing Biocidal Composition	Stephen T. Wellinghoff	SwRI
5,663,520	9/2/1997	Vehicle Mine Protection Structure	Michael D. Ladika, Dennis Jerome Malone, David John Stevens	Sponsored
5,660,617	8/26/1997	System and Method for Maintaining Multiphase Flow With Minimal Solids Degradation	Gregory John Hatton	SwRI
5,650,446	7/22/1997	Sustained Release Biocidal Composition	Stephen T. Wellinghoff, Joel J. Kampa	SwRI
5,644,006	7/1/1997	High Strength Thermoset Copolymers Incorporating Modified Bisoxazoline Monomers	Marvin L. Deviney, Joel J. Kampa	SwRI
5,639,295	6/17/1997	Method of Making a Composition Containing A	Stephen T. Wellinghoff,	SwRI

# SwRI Patents

11/17/2009

Patent No.	Date of Issue	Title of Invention	Inventor(s)	Assignee
		Stable Chlorite Source	Joel J. Kampa	
5,631,300	5/20/1997	Method of Making a Sustained Release Biocidal Composition	Stephen T. Wellinghoff	SwRI
5,631,024	5/20/1997	Medicaments For Beneficial Insects and Method	Sherrene D. Kevan, Peter G. Kevan, Jack D. Trevino	Sponsored
5,630,718	5/20/1997	Weather Simulation System	Bruce C. Montag, Dennis J. Wenzel, Richard P. Weyrauch	SwRI
5,629,471	5/13/1997	Sampling and Measuring Device with Calibrating Piston	James D. King	SwRI
5,624,718	4/29/1997	Diamond-Like Carbon Based Electrocatalytic Coating for Fuel Cell Electrodes	Geoffrey Dearnaley	SwRI Assigned
5,616,659	4/1/1997	Low Flammability Thermoset Polymers	Joel J. Kampa, Marvin L. Deviney	SwRI
5,607,708	3/4/1997	Encapsulated Volatile Flavoring Materials	Mark S. Fraser, Kenneth C. Goodnight, Chel W. Lew	Sponsored
5,607,684	3/4/1997	Manufacture of Bait with Hot Melt Binder	Chel W. Lew, Kelly S. Johns	Sponsored
5,605,714	2/25/1997	Treatments to Reduce Thrombogenicity in Heart Valves Made from Titanium and its Alloys	Geoffrey Dearnaley, James Lankford, Jr.	SwRI
5,603,073	2/11/1997	Heavy Alloy Based on Tungsten-Nickel-Manganese	Animesh Bose	SwRI
5,601,761	2/11/1997	Encapsulated Active Materials and Method for Preparing Same	Dwight K. Hoffman, David V. Dellar, Herman W. Schlameus	SwRI/Dow Chemical
5,598,359	1/28/1997	Weather Effects Generator for Simulation Systems	Bruce C. Montag, Dennis J. Wenzel, Richard P. Weyrauch	SwRI
5,594,340	1/14/1997	Apparatus for Accurately Controlling Moisture Levels of Aqueous Surfactant Compositions During On Line Processing Including a Cross-Feed Piston Assembly	Laurie Coyle, Kevin M. Finucane, James D. King, Harold F. Donoho, Armando De Los Santos	Sponsored
5,594,041	1/14/1997	Methods For Increasing Structural Integrity of Polymers and Polymers Treated by Such Methods	Geoffrey Dearnaley, Leonard Herk.	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
5,593,719	1/14/1997	Treatments To Reduce Frictional Wear Between Components Made of Ultra-High Molecular Weight Polyethylene and Metal Alloys	Geoffrey Dearnley, James Lankford	SwRI
5,587,534	12/24/1996	Wall Thickness and Flow Detection Apparatus and Method for Gas Pipelines	Joseph D. McColskey, William P. Dube, M. Forunko, Raymond E. Schramm, Martin C. Renken, Cecil M. Teller, II, Glenn M. Light	SwRI/ U.S. Secretary of Commerce
5,584,178	12/17/1996	Exhaust Gas Combuster	David W. Naegeli, Michael E. Crane	SwRI
5,582,861	12/10/1996	Method for Repair of Coatings On Carbon-Carbon Composites	Rene Graef, Stuart T. Schwab	SwRI
5,581,037	12/3/1996	Nondestructive Evaluation of Pipes and Tubes Using Magnetostrictive Sensors	Cecil M. Teller, II, Hegeon Kwun	SwRI
5,580,433	12/3/1996	Selective Electrochemical Detector for Nitric Oxide and Method	Charles K. Baker, Mohan R. A. Ram, Stephen T. Wellinghoff	Sponsored
5,571,522	11/5/1996	Bait with Corn Germ	Derrill Munson, Chel W. Lew, James M. Gaggero, Keith Branly	Sponsored
5,569,153	10/29/1996	Method of Immobilizing Toxic Waste Materials and Resultant Products	Robert D. Young, William A. Mallow	SwRI
5,563,339	10/8/1996	Self-Correcting Auto-Calibrating Vapor Pressure Analyzer	Gregory S. Schmid, Jack Russell Compton, Jose Luis De La Cruz	SwRI
5,558,054	9/24/1996	Variable Preload System for Valve Springs	Jongmin Lee, Susumu Ariga	SwRI
5,556,713	9/17/1996	Diffusion Barrier For Protective Coatings	Gerald R. Leverant	SwRI
5,555,880	9/17/1996	High Frequency Oscillatory Ventilator and Respiratory Measurement System	Dean C. Winter, Kevin S. Honeyager, Merle E. Converse, Ralph E. Harris	SwRI
5,544,811	8/13/1996	Flame Spray System and Method of Using the Same	Dean Tillery, Paul D. Musgrave, John McClusky, Russell L. Myers	Sponsored

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
5,543,447	8/6/1996	Stabilization of Red Amorphous Phosphorous By Ordered Polymeric Structures for the Manufacture of Non-Imissive Fire Retardant Plastics	Michael A. Miller, Scott F. Timmons, Darren E. Barlow	SwRI
5,542,118	7/30/1996	Induction Field Coupled Transmission System Incorporating a Passive Transmitter	Thomas J. Warnagiris	SwRI
5,539,649	7/23/1996	Automated Design and Manufacture of Artificial Limbs	Harry Grothus, Keith S. Pickens, Mark Muller, Nicholas Walsh, Virgil Faulkner	SwRI
5,537,741	7/23/1996	Method of Wire Harness Assembly System	Eric C. Peterson, Alex H. Damalas, Glynn R. Bartlett, Steven B. Farmer, Leslie B. Hoffman, Tak Kameoka, Horace H. Wacaser, Paul B. Wood	Sponsored
5,533,538	7/9/1996	Apparatus for Cleaning Articles Utilizing Supercritical and Near Supercritical Fluids	Mary C. Marshall	SwRI
5,526,796	6/18/1996	Air Assisted Fuel Injector with Timed Air Pulsing	Evan Scott Guy, Robert H. Thring	SwRI
5,524,599	6/11/1996	Fuzzy Logic Air/Fuel Controller	Hakchul Kong	SwRI
5,512,330	4/30/1996	Parylene Precursors for Diamond Like Carbon Coatings	Geoffrey Dearnaly	SwRI
5,507,185	4/16/1996	Adaptive Scanning Technique for Ultrasonic Testing Utilizing Realtime Lift-Off Detection	Keith S. Pickens	SwRI
5,505,967	4/9/1996	Microparticulate Pharmaceutical Delivery System	H. Wade Schlameus, Richard S. Geary	SwRI
5,501,745	3/26/1996	Low Temperature Method for Making a Photovoltaic Material	Geoffrey Dearnaley	SwRI
5,499,605	3/19/1996	Regenerative Internal Combustion Engine	Robert H. Thring	SwRI
5,496,374	3/5/1996	Ion Beam Modification of Bioactive Ceramics to Accelerate Biointegration of Said Ceramics	Cheryl Blanchard, Geoffrey Dearnaley, James Lankford	SwRI
5,494,867	2/27/1996	Method For Making Fiber-Reinforced Silicon Nitride Composite	David L. Davidson, Stuart T. Schwab, Renee C. Graef	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
5,493,171	2/20/1996	Spark Plug Having Titanium Diboride Electrodes	Charles D. Wood, III, Cheryl Blanchard, James Lankford, Jr., James J. Cole, Gerald S. McAlwee	SwRI
5,490,661	2/13/1996	Quick Release System For Guardrail Terminals	David J. Stevens, Kirk A. Marchand, Joseph B. Mayer, Jr.	SwRI
5,488,969	2/6/1996	Metering Valve	Steven R. King, James J. Cole, Kennon H. Guglielmo, John P. Latusek	Sponsored
5,486,768	1/23/1996	Surface Resistivity Meter for Determining Surface Degradation of High Resistivity Materials	William A. Mallow, H. Stanley Silvus, Charles H. Parr, Jerome Dzuik, Jr.	SwRI
5,484,587	1/16/1996	Diabroticine Bait	Keith Branly, James M. Gaggero, Chel W. Lew, Cathy S. Lamb	Sponsored
5,481,924	1/9/1996	Method and Apparatus For Assessing and Quantifying Pulsation Induced Error in Gas Turbine Flow Meters	Cecil R. Sparks, Robert J. McKee	Sponsored
5,480,305	1/2/1996	Weather Simulation System	Bruce C. Montag, Dennis J. Wenzel, Richard P. Weyrauch	SwRI
5,474,849	12/12/1995	Adhesive Composition, Carbon-Carbon Composite Structures Prepared Therewith and Method of Forming Same	Rene Graef, Stuart T. Schwab, David C. Paquette	SwRI
5,473,245	12/5/1995	Magnetostrictive Linear Displacement Transmitter Having Improved Piezoelectric Sensor	Howard S. Silvus, Jr., Edward J. Miller, Jr., J. Marion Matherne, Tony W. Harper	Sponsored
5,471,400	11/28/1995	Method of Detecting and Specifying Compressor Cylinder Leaks	Anthony J. Smalley, C. Richard Gerlach, Ralph E. Harris	Sponsored
5,466,460	11/14/1995	Controlled Release Microcapsules	William A. MacMahon, Chel W. Lew, Keith L. Branley	Sponsored
5,466,350	11/14/1995	Selective Electrochemical Detector for Nitric Oxide and Method	Charles K. Baker, Mohan R. A. Ram, Stephen T. Wellinghoff	Sponsored

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
5,463,220	10/31/1995	Time of Flight Mass Spectrometer Ion Source, and Methods of Preparing a Sample For Mass Analysis and of Mass Analyzing A Sample	David T. Young, Jill T. Marshall, Emile A. Schweikert, Melvin A. Park	SwRI
5,457,994	10/17/1995	Nondestructive Evaluation of Non-Ferromagnetic Materials Using Magnetostrictively Induced Acoustic/Ultrasonic Waves and Magnetostrictively Detected Acoustic Emissions	Hegeon Kwun, Cecil M. Teller, II	SwRI
5,457,151	10/10/1995	Polysilazane Adhesive Compositions	Stuart T. Schwab, Renee Graef, David G. Paquette	SwRI
5,456,325	10/10/1995	Method and Apparatus for Driving a Probe into the Earth	Phontie J. Pantermuehl, Donald H. Heihn, Thomas E. Owen	SwRI
5,456,113	10/10/1995	Nondestructive Evaluation of Ferromagnetic Cables and Ropes Using Magnetostrictively Induced Acoustic/Ultrasonic Waves and Magnetostrictively Detected Acoustic Emissions	Hegeon Kwun, Cecil M. Teller, II	SwRI
5,452,763	9/26/1995	Method and Apparatus for Generating Gass in a Drilled Borehole	Thomas E. Owen	SwRI
5,444,451	8/22/1995	Passive Means for Single Site Radio Location	Richard L. Johnson, Robert Q. Black, Allan G. Sonstebly	SwRI
5,442,960	8/22/1995	Measurement of Mass Using Angular Simple Harmonic Motion	Ruell F. Solberg, Jr.	SwRI
5,440,566	8/8/1995	Fault Detection and Diagnosis For Printed Circuit Boards	Hugh F. Spence, Robert A. Houston, Daniel P. Burris	SwRI
5,409,591	4/25/1995	Selective Electrochemical Detector for Nitric Oxide and Method	Charles K. Baker, Mohan R. A. Ram, Stephen T. Wellinghoff	Sponsored
5,409,379	4/25/1995	Weather Simulation System	Bruce C. Montag, Dennis J. Wenzel, Richard P. Weyrauch	SwRI
5,403,655	4/4/1995	Toughened Thermosetting Resin Composites and Process	Marvin L. Deviney, Joel J. Kampa	SwRI
5,401,322	3/28/1995	Apparatus and Method for Cleaning Articles Utilizing Supercritical and Near Supercritical Fluids	Mary C. Marshall	SwRI
5,393,572	2/28/1995	Ion Beam Assisted Method of Producing a Diamond-Like Carbon Coating	Geoffrey Dearnaley	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
5,391,407	2/21/1995	Process for Forming Protective Diamond-Like Carbon Coatings on Metallic Surfaces	Geoffrey Dearnaley,	SwRI
5,385,778	1/31/1995	Toughened Thermosetting Resin Composites and Process	Marvin L. Deviney, Joel J. Kampa	SwRI
5,383,368	1/24/1995	Deflection Sensor for Robot Links	Ernest Franke, Ashok Nedungadi, Glynn Bartlett	SwRI
5,382,435	1/17/1995	Microparticulate Pharmaceutical Delivery System	H. Wade Schlameus, Richard S. Geary	SwRI
5,372,796	12/13/1994	Metal Oxide-Polymer Composites	Stephen T. Wellinghoff	SwRI
5,367,310	11/22/1994	Fiber Optic Antenna Radiation Efficiency Tuner	Thomas J. Warnagiris	SwRI
5,365,864	11/22/1994	Laboratory Scale Incinerator Simulation System	Walter G. Switzer	Sponsored
5,364,634	11/15/1994	Controlled-Release PH Sensitive Capsule and Adhesive System and Method	Chel W. Lew,	SwRI
5,360,976	11/1/1994	Time of Flight Mass Spectrometer, Ion Source, and Methods of Preparing A Sample For Mass Analysis and of Mass Analyzing A Sample	David T. Young, Jill T. Marshall, Emile A. Schweikert, Melvin A. Park	SwRI
5,360,609	11/1/1994	Chlorine Dioxide Generating Polymer Packaging Films	Stephen T. Wellinghoff	SwRI
5,360,074	11/1/1994	Method and Composition for Preserving Core Sample Integrity Using an Encapsulating Material	Pierre E. Collee, William A. Mallow, Steven R. Radford	Sponsored
5,358,994	10/25/1994	Thermoplastic Material for Production and Repair of Polymeric Products and Coating of Metals	William A. Mallow	Sponsored
5,353,776	10/11/1994	Method and Apparatus for Controlling Fuel Flow to Lean Burn Engines	Robert W. Burrahm, David P. Meyers	SwRI
5,352,288	10/4/1994	Low-Cost, High Early Strength, Acid-Resistant Pozzolanic Cement	William A. Mallow	Sponsored
5,348,803	9/20/1994	Microcapsules and Method for Degrading Hydrocarbons	James R. Scott, Mary C. Marshall, Matthew L. Alexander, Michael G. MacNaughton, H. Wade Schlameus	SwRI
5,339,634	8/23/1994	Fuel Supply System for Engines and Combustion	Nigel F. Gale,	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
		Processes Therefor	David W. Naegeli, Thomas W. Ryan, III, Steven R. King	
5,331,928	7/26/1994	Variable Compression Piston	Charles D. Wood	SwRI
5,322,797	6/21/1994	Method for Detecting Vapor and Liquid Reactants	William A. Mallow, Jerome J. Dzuik, Jr.	SwRI
5,321,410	6/14/1994	Adaptive Doppler DF System	Jackie E. Hipp, William G. Guion	SwRI
5,317,608	5/31/1994	Method for Thermally Treating Discharged Nuclear Fuel	English C. Percy, Hersh K. Manktala	SwRI
5,302,782	4/12/1994	Three-Component Borehole Wall-Locking Seismic Detector	Thomas E. Owen	SwRI
5,297,515	3/29/1994	Fuel Supply Systems for Engines and Combustion Processes Therefor	Nigel F. Gale, David W. Naegeli, Thomas W. Ryan, III, Steven R. King	SwRI
5,294,446	3/15/1994	Composition and Method of Promoting Hard Tissue Healing	H.W. Schlameus, William C. Fox, Donald J. Mangold, Robert G. Triplett, George R. Holt, Thomas B. Aufdemorte	Swri
5,294,425	3/15/1994	Polysilazane Precursors for Silicon Nitride and Resultant Products	Stuart T. Schwab	SwRI
5,292,657	3/8/1994	Process for Preparing Rotary Disc Fatty Acid Microspheres of Microorganisms	William M. Rutherford, Jack E. Allen, Herman W. Schlameus, Donald J. Mangold, William W. Harlowe, Jr., Joseph R. Lebeda	Sponsored
5,292,533	3/8/1994	Controlled Release Microcapsules	William A. McMahon, Chel W. Lew, Keith L. Branly	Sponsored
5,291,136	3/1/1994	Variable Angle Eddy Current Probe	William R. Van der Veer, Glenn M. Light	Sponsored
5,285,521	2/8/1994	Audible Techniques for the Reception of Nondestructive Evaluation Information	Amos E. Holt, Kent D. Polk, Richard A. Cervantes	SwRI
5,280,411	1/18/1994	Packaging for an Electronic Circuit Board	Gregory J. Dirks,	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
			Mark V. Muller	
5,271,934	12/21/1993	Encapsulated Antiperspirant Salts and Deodorant/Antiperspirants	Marvin E. Goldberg, David M. Kellner, Chel W. Lew, Cathy S. Lamb	Sponsored
5,270,647	12/14/1993	Pipe Electromagnetic Field Simulation Apparatus Using Born's Approximation Rule	Robert Beissner, Takashi Kikuta	Sponsored
5,262,644	11/16/1993	Remote Spectroscopy for Raman and Brillouin Scattering	John F. Maguire	SwRI
5,256,036	10/26/1993	Method and Apparatus for Pumping a Medium	James J. Cole	SwRI
5,254,598	10/19/1993	Biodegradable Composition and Products	Herman W. Schlameus, Mary C. Marshall, Stephen T. Wellinghoff, Donald J. Mangold, James R. Scott	SwRI
5,246,636	9/21/1993	Process for Making Microcapsules and Apparatus Therefor	Chel W. Lew, Jack D. Trevino	SwRI
5,243,865	9/14/1993	Dermal Exposure Testing Method and Apparatus Therefor	Jong-Ryng Hsu, David E. Camann, Kevin Villalobos	SwRI
5,240,782	8/31/1993	Fiber and Whisker Reinforced Composites and Method for Making the Same	Animesh Bose, James Lankford, Richard Page, Cheryl Blanchard	SwRI
5,239,969	8/31/1993	Mechanical Fuel Injector for Internal Combustion Engines	Kevin D. Beaty	SwRI
5,229,977	7/20/1993	Directional Underwater Acoustic Pulse Source	Thomas E. Owen	SwRI
5,228,011	7/13/1993	Variable Multi-Stage Arc Discharge Acoustic Pulse Source Transducer	Thomas E. Owen	SwRI
5,225,731	7/6/1993	Solid Body Piezoelectric Bender Transducer	Thomas E. Owen	SwRI
5,224,449	7/6/1993	Lean-Burn Internal Combustion System	Yukiyoshi Fukano, Susumu Ariga	Sponsored
5,222,993	6/29/1993	Ignition System for Water-Cooled Gas Engines	Michael E. Crane	Sponsored
5,216,598	6/1/1993	System for Correction of Trends Associated with Pulse Wave Forms in Oximeters	Ronald L. Branstatter, Reuben W. Edgar	Sponsored

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
5,203,329	4/20/1993	Noninvasive Reflectance Oximeter Sensor Providing Controlled Minimum Optical Detection Depth	Setsuo Takatani, Jonathan P. Jaeb, Ronald L. Branstetter, Hiroshi Sakai	Sponsored
5,201,299	4/13/1993	Rotary Gaseous Fuel Injector	Hakchul Kong	SwRI
5,199,864	4/6/1993	Spherical Fluid Pump or Motor with Spherical Ball Comprising Two Parts	Gary L. Stecklein	Sponsored
5,199,008	3/30/1993	Device for Digitally Measuring Intervals of Time	Walter L. Lockhart, Benjamin M. Piepgrass	SwRI
5,198,871	3/30/1993	Laser-Induced-Fluorescence Inspection of Jet Fuels	David W. Naegeli, Ralph H. Hill, Jr.	SwRI
5,195,373	3/23/1993	Ultrasonic Transducer for Extreme Temperature Environments	Glenn M. Light, Richard Cervantes, David G. Alcazar	SwRI
5,194,262	3/16/1993	Encapsulated Antiperspirant Salts and Deodorant/Antiperspirants	Marvin E. Goldberg, David M. Kellner, Chel W. Lew, Cathy S. Lamb	Sponsored
5,193,495	3/16/1993	Internal Combustion Engine Valve Control Device	Charles D. Wood, III	SwRI
5,184,434	2/9/1993	Process for Cutting with Coherent Abrasive Suspension Jets	Richard H. Hollinger, William D. Perry	SwRI
5,183,763	2/2/1993	Composition and Method for Detecting Vapor and Liquid Reactants	Jerome J. Dzuik, William A. Mallow	SwRI
5,180,969	1/19/1993	Detection of Reinforcing Steel Corrosion in Concrete Structures Using Non-Linear Harmonic and Intermodulation Wave Generation	Gary L. Burkhardt, Hegeon Kwun, Jay L. Fisher	SwRI
5,178,119	1/12/1993	Combustion Process and Fuel Supply System for Engines	Nigel F. Gale	SwRI
5,173,333	12/22/1992	Apparatus and Method for Discharging Static Electricity on the Internal Surface of Plastic Pipe	Oren Tranbarger, Clarence R. McGinnis, David H. Strain	SwRI
5,173,274	12/22/1992	Flash Liquid Aerosol Production Method and Apparatus	Thomas E. Owen	SwRI
5,167,962	12/1/1992	Filament System for Delivering a Medicament and Method	Chel W. Lew, Jack D. Trevino	SwRI
5,167,947	12/1/1992	Enhancement of Absorption of Radioprotective Drugs	Richard S. Geary	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
5,166,613	11/24/1992	Method and Apparatus for Mapping Stress Within Ferromagnetic Materials by Analyzing Barkhausen Noise Formed by the Introduction of Magnetic Fields	William D. Perry	SwRI
5,166,004	11/24/1992	Fiber and Whisker Reinforced Composites and Method for Making the Same	Animesh Bose, James Lankford, Richard Page, Cheryl Blanchard	SwRI
5,164,195	11/17/1992	Method of Oral Delivery With an Adherent Controlled-Release Salt Sensitive Capsule	Chel W. Lew	SwRI
5,159,617	10/27/1992	Explosive Detection Method and Apparatus Using Selective Gamma Ray Resonance Absorption	Derwin J. King, Colin I. Nichols	SwRI
5,151,695	9/29/1992	Telemetric Measuring Device with High Power Generation	Robert W. Burrahm, James Davis, Armando De Los Santos, William Perry, William Rollwitz	SwRI
5,144,922	9/8/1992	Fuel Injection System for Compression Ignition Engines	Hakchul Kong	SwRI
5,136,994	8/11/1992	Internal Combustion Engine	Nigel F. Gale	SwRI
5,132,125	7/21/1992	Encapsulated Corn Kernels and Method of Forming the Same	Chel W. Lew, Darren E. Barlow	SwRI
5,130,412	7/14/1992	Electrochemical Drug Release and Article	Stephen T. Wellinghoff, Charles K. Baker	SwRI
5,129,267	7/14/1992	Flow Line Sampler	Colin I. Nichols	SwRI
5,122,746	6/16/1992	Hydrocarbon Gas Measurements Using Nuclear Magnetic Resonance	James D. King, William L. Rollwitz, Colin I. Nichols, Armando De Los Santos	Sponsored
5,119,780	6/9/1992	Staged Direct Injection Diesel Engine	Susumu Ariga	SwRI
5,118,194	6/2/1992	Optical Inspection of Lacquer and Carbon Deposits	Bruce C. Mather, David S. McFalls, Doug L. Michalsky	SwRI
5,114,914	5/19/1992	Fabrication of High Temperature Superconductors	Martin J. Sablik, Colin I. Nichols, Robert E. Anderson	SwRI
5,109,710	5/5/1992	Direct Filter Injection System for Gas	Matthew S. Newkirk,	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
		Chromatographs	David M. Human	
5,109,698	5/5/1992	Monopole, Dipole, and Quadrupole Borehole Seismic Transducers	Thomas F. Owen	SwRI
5,096,394	3/17/1992	Positive Displacement Pump With Rotating Reciprocating Piston and Improved Pulsation Dampening	C. Richard Gerlach, Edgar C. Schroeder	Sponsored
5,094,239	3/10/1992	Composite Signal Implementation for Acquiring Oximetry Signals	Jonathan P. Jaeb, Ronald L. Branstetter	Sponsored
5,094,204	3/10/1992	Stratified Charge Injection for Gas-Fueled Rotary Engines	Steven R. King	Sponsored
5,092,305	3/3/1992	Apparatus and Method for Providing an Alternative Fuel System for Engines	Steven R. King	Sponsored
5,083,536	1/28/1992	Compression Piston Ring Groove for an Internal Combustion Engine	Susumu Ariga	SwRI
5,081,391	1/14/1992	Piezoelectric Cylinder Transducer for Producing or Detecting Asymmetrical Vibrations	Thomas E. Owen	SwRI
5,080,190	1/14/1992	Reversible Rigid Coupling Apparatus and Method for Borehole Seismic Transducers	Thomas E. Owen, Jorge O. Parra	SwRI
5,074,767	12/24/1991	Positive Displacement Pump with Reciprocating Piston and Improved Lubrication	Richard C. Gerlach, Edgar C. Schroeder	Sponsored
5,067,085	11/19/1991	Optical Robotic Canopy Polishing System	David S. McFalls, Dennis J. Wenzel	SwRI
5,065,019	11/12/1991	Method for Determining Petroleum Saturation in a Subsurface	Glenn T. Darilek, Dewey B. Keeton, III	SwRI
5,064,650	11/12/1991	Controlled-Release Salt Sensitive Capsule for Oral Use and Adhesive System	Chel W. Lew,	SwRI
5,050,570	9/24/1991	Open Cycle Internal Combustion Stirling Engine	Robert H. Thring	SwRI
5,038,038	8/6/1991	Optical Sensor for Detecting Quantity of Protective Coating (1906)	R.J. Weniger, E.A. Franke, Glynn Bartlett	SwRI
5,032,844	7/16/1991	Sky Wave Direction Finder	Jackie E. Hipp, Douglas N. Travers	SwRI
5,030,959	7/9/1991	Enhanced Automatic Bearing Indicator System	Edgar C. Hayden	SwRI
5,030,873	7/9/1991	Monopole, Dipole, and Quadrupole Borehole Seismic	Thomas E. Owen	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
		Transducers		
5,028,873	7/2/1991	Tester for a Reed Relay Printed Circuit Board	Timothy L. Koebke	SwRI
5,028,715	7/2/1991	Radioprotective Agents and Their Method of Manufacture	Robert E. Lyle, Jr., William A. McMahon, Donald J. Mangold, Nollie F. Swynnerton	SwRI
5,022,831	6/11/1991	Positive Displacement Pump with Rotating Reciprocating Piston	C.Richard Gerlach, Edgar C. Schroeder	Sponsored
5,020,826	6/4/1991	Vehicle Suspension System	Gary L. Stecklein, Glenn R. Wendel	SwRI
5,012,777	5/7/1991	Improved Internal Combustion Engine	Q.A. Baker, G. O'Neal, H. Mecredy	SwRI/U.S. Dept of Energy
5,007,423	4/16/1991	Oximeter Sensor Temperature Control	Ronald L. Branstetter, Jonathan P. Jaeb, Jeffrey M. Gabelmann	Sponsored
5,005,581	4/9/1991	Motion Artifact Detection for Continuous Blood Pressure Monitor	Kevin S. Honeyager	Sponsored
5,003,985	4/2/1991	End Tidal Respiratory Monitor	Curtis D. White, Billy L. Carpenter	Sponsored
5,002,785	3/26/1991	Method of Making Encapsulated Food Products	Chel W. Lew	SwRI
5,001,932	3/26/1991	Ultrasonic Squirter	Glenn M. Light, William R. Van der Veer	Sponsored
4,994,023	2/19/1991	Electrochemical Drug Release and Article	S.T. Wellinghoff, C.K. Baker	SwRI
4,992,310	2/12/1991	Fire Pouch	Gabriel M. Geib, William A. Mallow, Scott Stropkay	Sponsored
4,987,900	1/29/1991	Apparatus for Positioning Transducer for Blood Pressure Monitor (ID 1792)	Dean C. Winter, Joseph S. Eckerle	Sponsored
4,984,738	1/15/1991	Unit Injector for Staged Injection	Knut Winquist	Sponsored
4,979,125	12/18/1990	Non-Destructive evaluation of ropes by using transvers impulse vibrational wave method	Hegeon Kwun, Gary L. Burkhardt	SwRI
4,966,156	10/30/1990	Pressurization System for Continuous Blood Pressure Monitor Transducer (ID 1979)	William D. Perry, Dean C. Winter	Sponsored

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
4,958,605	9/25/1990	Fuel Injection Nozzle	Glenn B. O'Neal, Quentin A. Baker, Henry E. Mecredy, III, Daniele Terna	Sponsored
4,958,333	9/18/1990	Shielding for Seismic Cables	John T. O'Brien	SwRI
4,950,374	8/21/1990	Electrophoretic Leak Sealing System	Glenn T. Darilek, Daren L. Laine	SwRI
4,948,912	8/14/1990	Alkylating Agents and Method of Use Thereof	Robert E. Lyle, Jr., Donald J. Mangold, Nolie F. Swynnerton	SwRI
4,947,470	8/7/1990	System for Locating Leaks in Geomembrane-lined Impoundment or Landfill Filled with Material	Glenn T. Darilek	SwRI
4,936,851	6/26/1990	Analytic Bone Implant	W.C. Fox, W.T. Balogh, P.J. Pantermuehl, T.B. Aufdemore, G.R. Holt	Sponsored
4,936,269	6/26/1990	Method and Apparatus for Reduced Oil Consumption and Oil Deterioration in Reciprocating Engines	Kevin D. Beaty	SwRI
4,924,871	5/15/1990	Motion Artifact Detection for Continuous Blood Pressure Monitor Transducer	Kevin S. Honeyager	Sponsored
4,913,111	4/3/1990	Turbulence Generator For Two-Stroke Spark-Assisted Diesel Engines	Susumu Ariga	Sponsored
4,907,544	3/13/1990	Turbocharged Two-stroke Internal Combustion Engine with Four-stroke Capability	Robert W. Burrahm	SwRI
4,905,706	3/6/1990	Method and Apparatus for Detection of Heart Disease	B. Duff, C. Gibson, D. Winter, H. Peel	Sponsored
4,905,210	2/27/1990	Liquid Impoundment Survey Vehicle Incorporating Positioning Finding & Tracking System	Thomas E. Owen	SwRI
4,903,324	2/20/1990	Ring Around Transceiver	Thomas J. Warnagiris	Sponsored
4,899,760	2/13/1990	Noise Rejecting Detector for Biomedical Signals	Jonathan P. Jaeb, M.E. Converse	Sponsored
4,899,590	2/13/1990	Pump Shaft Inspection System	Glenn M. Light, Edward A. Bloom, Soung-Nan Liu	Sponsored

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
4,893,631	1/16/1990	Active Element Selection for Continuous Blood Pressure Monitor Transducer	Dennis J. Wenzel, Dean C. Winter, Kevin S. Honeyager	Sponsored
4,892,849	1/9/1990	Ceramic Composition Having Low Friction Coefficient at High Operating Temperatures	James Lankford	U.S. NASA
4,890,496	1/2/1990	Method and Means for Detection of Hydrogen Attack by Ultrasonic Wave Velocity Measurements	Anmol S. Birring, David G. Alcazar, Gary J. Hendrix, John J. Hanley	Sponsored
4,888,140	12/19/1989	Method of Forming fluid Filled Microcapsules	Wade Schlameus, Chel W. Lew	Sponsored
4,885,327	12/5/1989	Swelled Polymeric Decontamination Composition	William A. McMahon, Jr., David A. Trujillo, Robert E. Lyle, Jr.	SwRI
4,883,608	11/28/1989	Polymeric Decontamination Composition	David A. Trujillo, William A. McMahon, Jr., Robert E. Lyle, Jr.	SwRI
4,880,646	11/14/1989	Encapsulated Corn Kernels & Method of Forming the Same	Chel W. Lew, Darren E. Barlow	SwRI
4,880,304	11/14/1989	Optical Sensor for Pulse Oximeter	Jonathan P. Jaeb, Dennis W. Gilstad, Ronald L. Branstetter	Sponsored
4,874,611	10/17/1989	Microencapsulated Ant Bait	Wilfred W. Wilson, C. Polemenakos, J. Larry Potter, Donald J. Mangold, William W. Harlowe, Herman W. Schlameus	Sponsored
4,873,947	10/17/1989	Variable Compression Ratio Direct Injection Engine	Thomas W. Ryan, III, Milan J. Maymar, Orin M. Anderson	SwRI
4,866,283	9/12/1989	Optical Inspection of Food Products	Ralph H. Hill	SwRI
4,854,699	8/8/1989	Backscatter Oximeter	Reuben W. Edgar, Jr.,	Sponsored
4,852,579	8/1/1989	Photocharacterization and Treatment of Normal Abnormal and Ectopic Endometrium	Dennis W. Gilstad, Ronald L. Branstetter, Ralph H. Hill	Sponsored
4,850,524	7/25/1989	Vertical Strip Clad Welding Method and Apparatus	Wilbur R. Schick,	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
			Dwight M. Lloyd	
4,849,140	7/18/1989	Method for Producing Monosized Ceramic Particle Through Organometallic Swollen Latex Particles	Stephen T. Wellinghoff, Stuart T. Schwab, Carlos D. Herrera	SwRI
4,845,976	7/11/1989	Method and Apparatus of Determining Energy Content of a Diluted Hydrocarbon Gas	James E. Johnson, Raymond J. Magott, Clinton M. Wood	Sponsored
4,836,213	6/6/1989	Pressure Control System for Continuous Blood Pressure Monitor Transducer	Dennis J. Wenzel, Dean C. Winter, Kevin S. Honeyager	Sponsored
4,835,474	5/30/1989	Method and Apparatus for Detecting Subsurface Anomalies	Jorge O. Parra, Thomas E. Owen, Bob M. Duff	SwRI
4,832,039	5/23/1989	Linear, Low Noise Inflation System for Blood Pressure Monitor	William D. Perry, Donald H. Heihn	Sponsored
4,830,017	5/16/1989	Automatic Positioning System for Continuous Blood Pressure Monitor Transducer	William D. Perry, Dean C. Winter	Sponsored
4,828,620	5/9/1989	Calcination of Calcium Carbonate and Blends Thereof	William A. Mallow, Jerome J. Dziuk, Jr.	SwRI
4,813,231	3/21/1989	Engine Exhaust After-Treatment Device	Bruce B. Bykowski	SwRI
4,808,889	2/28/1989	Circuit for Fluorescent Light Power Supply in a Borehole Television Probe	Glenn T. Darilek	SwRI
4,803,996	2/14/1989	Cardiovascular Monitor	H. Herbert Peel, Merle E. Converse, William H. McGinnis, Donald J. Shirley, John P. Prudhomme	Sponsored
4,802,762	2/7/1989	Optical Inspection of Polymer-Based Materials	Ralph H. Hill	SwRI
4,801,411	1/31/1989	Method and Apparatus for Producing Monosize Ceramic Particles	Stephen T. Wellinghoff, Thomas E. Owen	SwRI
4,800,892	1/31/1989	Apparatus for Inflating Cuff for Blood Pressure Monitoring System	William D. Perry, Donald H. Heihn, H. Herbert Peel	Sponsored
4,798,870	1/17/1989	Reactive Surface for Decontamination	Robert E. Lyle, Jr., Henry F. Hamil	SwRI
4,796,636	1/10/1989	Noninvasive Reflectance Oximeter	Ronald L. Branstetter,	Sponsored

# SwRI Patents

11/17/2009

Patent No.	Date of Issue	Title of Invention	Inventor(s)	Assignee
			Reuben W. Edgar	
4,791,811	12/20/1988	Deposit Thickness Measurement	James G. Barbee	SwRI
4,790,326	12/13/1988	Method and Apparatus for Determining Pulse Rate	Bruce C. Mather, William C. Fox, Harry H. Peel, Dennis J. Wenzel	Sponsored
4,784,154	11/15/1988	Interference Resistant Biomedical Transducer	Donald J. Shirley, Merle E. Converse	Sponsored
4,779,626	10/25/1988	Method and Apparatus for Compensating for Transducer Position in Blood Pressure Monitoring System	Harry H. Peel, James M. Burkes	Sponsored
4,775,548	10/4/1988	Method of Producing Ceramic Composition Having Low Friction Coefficient at High Operating Temperatures	James Lankford	SwRI
4,768,481	9/6/1988	Process and Engine Using Compression Ignition of a Homogeneous Fuel-Air Mixture	Charles D. Wood	SwRI
4,766,295	8/23/1988	Electronic Pricing Display System	Malcolm H. Davis, Kent A. Janes, Daniel J. Kleffner, Hugh F. Spence	Sponsored
4,764,317	8/16/1988	Microencapsulation Process and Apparatus	Eugene L. Anderson, William W. Harlowe, Jr., Leon M. Adams, Mary C. Marshall	SwRI
4,758,792	7/19/1988	Method for Utilizing a Spherical Dipole Probe for Detecting Faults in High Voltage Transmission Line Insulators	James J. Polonis, John P. Harrell, Melvin J. Johnson	SwRI
4,755,757	7/5/1988	Fluid Leak Detection System for Determining the Rate of Fluid Leakage Through a Geomembrane	John W. Cooper	SwRI
4,751,841	6/21/1988	Liquid Impoundment Leak Rate Detector	James C. Biard, Thomas E. Owen	SwRI
4,751,467	6/14/1988	System for Determining Liquid Flow Rate Through Leaks in Impermeable Membrane Liners	John W. Cooper	SwRI
4,740,757	4/26/1988	Method and Apparatus for Locating Leaks in a Multiple Layer Geomembrane Liner	Merle E. Converse, Thomas E. Owen	SwRI
4,736,773	4/12/1988	Electronically Switched Pneumatic Valve System	William D. Perry, Donald H. Heihn	Sponsored

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
4,731,744	3/15/1988	Position Sensor and System	John P. Harrell, Jr., Douglas L. Michalsky	Sponsored
4,731,096	3/15/1988	Hydrocarbon Compositions of High Elongational Viscosity and Process for Making the Same	Henry F. Hamil, W.D. Weatherford, George E. Fodor	SwRI
4,725,785	2/16/1988	Directional Potential Analyzer Method and Apparatus for Detecting and Locating Leaks In Geomembrane Liners	Merle E. Converse, Kathryn B. Glass, Thomas E. Owen	SwRI
4,724,800	2/16/1988	Ringless Piston Engine	Charles D. Wood,	SwRI
4,720,669	1/19/1988	Geomembrane Leak Assessment Shell Shaped Probe	Thomas E. Owen,	SwRI
4,719,407	1/12/1988	Automated Search Apparatus for Locating Leaks in Geomembrane Liners	Merle E. Converse, David W. Shultz	SwRI
4,715,326	12/29/1987	Multicylinder Catalytic Engine	Robert H. Thring	SwRI
4,714,080	12/22/1987	Method and Apparatus for Non-Invasive Monitoring of Arterial Blood Oxygen Saturation	Reuben W. Edgar, Dennis W. Gilstad, Ronald L. Branstetter	Sponsored
4,711,120	12/8/1987	Method of Wear Monitoring Using Ultrasonic Phase Comparison	Hegeon Kwun, Anmol S. Biring, Gurvinder P. Singh, Gary J. Hendrix, David G. Alcazar	Sponsored
4,710,226	12/1/1987	Fluidization of Limestone Slurries and Resultant Products	William A. Mallow	SwRI
4,706,228	11/10/1987	Asymmetrical Lateral-Force Seismic Source Transducer	Thomas E. Owen, Edgar C. Schroeder	SwRI
4,701,705	10/20/1987	NMR Moisture Measurements	William L. Rollwitz,	SwRI
4,697,166	9/29/1987	Method and Apparatus for Coupling Transceiver to Power Line Carrier	Thomas J. Warnagiris, William H. McGinnis	Sponsored
4,695,840	9/22/1987	Remote Switch Position Determination Using Duty Cycle Modulation	Glenn T. Darilek	Sponsored
4,689,569	8/25/1987	Directional Antenna System for Use in a Borehole Incorporating Antenna Dipole Elements	Bob M. Duff	SwRI
4,686,941	8/18/1987	Turbulence Generator for Two-Stroke Spark-Assisted Diesel Engines	Susumu Ariga	Sponsored

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
4,678,166	7/7/1987	Eccentric Loader Guardrail Terminal	Maurice E. Bronstad, James H. Hatton, Jr., Leonard C. Meczkowski	U.S. Dept of Transportation, Federal Hwy Dept.
4,675,604	6/23/1987	Computerized and Motorized Electromagnetic Flux Leakage Internal Diameter Tubular Inspection Device	Mark C. Moyer, William D. Perry, H. Stanley Silvus, Jr., William C. Gibson, Felix N. Kusenberger	Sponsored
4,668,413	5/26/1987	Preservative Oil for Metal Surfaces and Method	Alan A. Johnston, John P. Cuellar	Sponsored
4,663,067	5/5/1987	Transient Soil Erosion & Evaporation Palliative Composition and Method	William A. Mallow, Robert P. Wood	Sponsored
4,655,434	4/7/1987	Energy Absorbing Guardrail Terminal	Maurice E. Bronstad	SwRI
4,654,813	3/31/1987	Electronic Square Root Error Indicator	Carl E. Edlund, Cecil R. Sparks	Sponsored
4,652,876	3/24/1987	Remote Switch Position Determination Using Constant Current Signaling	Glenn T. Darilek	Sponsored
4,651,311	3/17/1987	Electrodeless Spark Discharge Acoustic Pulse Transducer for Borehole Operation	Thomas E. Owen, Edgar C. Schroeder	SwRI
4,638,251	1/20/1987	Method and Apparatus for Measuring Flow of Non-Homogeneous Material in Incompletely Filled Flow Channels	James D. King	SwRI
4,629,987	12/16/1986	Method and Apparatus for Nuclear Magnetic Resonant Measurement of Flow Velocity	James D. King, Erroll S. Riewerts, William L. Rollwitz	SwRI
4,617,937	10/21/1986	Blood Pressure Monitoring System	Harry H. Peel, John S. Brisco, Mark E. Moczygemba, Robert L. Neatherlin, Brenda A. Sargent	Sponsored
4,614,940	9/30/1986	Micropower DC Voltage indicator	Thomas H. Jaeckle	SwRI
4,608,991	9/2/1986	Method for In-Vivo NMR Measurements in the Human Breast to screen for Small Breast Cancer in an Otherwise Healthy Breast	William L. Rollwitz,	SwRI
4,600,052	7/15/1986	Compact Heat Exchanger	Charles D. Wood, Harvey S. Benson	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
4,599,680	7/8/1986	Packaging Arrangement for Spacecraft Computer	William C. Gibson, William M. Tomlinson, Eugene T. Goldstein, George A. Ferguson	SwRI
4,598,290	7/1/1986	Fiber Optic Penetrator for Offshore Oil Well Exploration and Production	Jerry C. Collins, Charles P. Warner, Jerry A. Henkener, Rolf Glauser	Sponsored
4,597,050	6/24/1986	Apparatus for Indicating Flow of Solid Material Into An Earth Moving Device	Harvey S. Benson,	SwRI
4,586,426	5/6/1986	Multi-Cylinder Piston Engine & Method of Operation Thereof	Edwin W. Dibrell, Glenn B. O'Neal, Wilbur A. Schaich	Sponsored
4,577,337	3/18/1986	X-ray Fluorescence Testing of Laminate Structures	Glenn M. Light,	SwRI
4,573,013	2/25/1986	Magnetic Inspection of Reinforcing Steel Rods in Prestressed Concrete	Felix N. Kusenberger, John R. Barton, George A. Ferguson	U.S. Dept of Transportation
4,570,745	2/18/1986	Method and Apparatus for Minimizing Pulsations in Fluid Transmission Systems	Cecil R. Sparks, Glenn Damewood	Sponsored
4,570,487	2/18/1986	Multibeam Satellite-Pulse Observation Technique for Characterizing Cracks in Bimetallic Coarse-Grained Component	George J. Gruber	SwRI
4,569,484	2/11/1986	Air Blast Type Coal Slurry Fuel Injector	Ramkrishna G. Phatak	U.S. Dept of Energy
4,565,095	1/21/1986	Sound Transducer Apparatus System and Method	Glenn M. Light, William R. Van der Veer	SwRI
4,562,212	12/31/1985	Method for Repelling Birds Especially Woodpeckers	Samuel J. Tomlinson, Sr, Edward E. Dean, Leon M. Adams	SwRI
4,559,610	12/17/1985	Gas Pumping System Analog	Cecil R. Sparks, Carl E. Edlund, Morton E. Brown	Sponsored
4,546,924	10/15/1985	Fuel Injector	Knut L. Winquist	SwRI
4,546,735	10/15/1985	Valve Actuator	Glenn B. O'Neal	SwRI
4,545,820	10/8/1985	Soil Stabilizer & Method for Stabilizing Soil	William A. Mallow	Sponsored

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
4,543,930	10/1/1985	Staged Direct Injection Diesel Engine	Quentin A. Baker	SwRI
4,542,344	9/27/1985	Detecting Buried Pipeline Depth & Location with Electromagnetic Triangulation	Glenn T. Darilek, Edward H. Cooper	Sponsored
4,536,711	8/20/1985	Method & Apparatus for Measuring Flow in a Pipe or Conduit	James D. King, Erroll S. Riewerts	SwRI
4,531,093	7/23/1985	Method & Apparatus for Coal Analysis & Flow Measurement	William L. Rollwitz,	SwRI
4,531,091	7/23/1985	Magnetic Inspection of Reinforcing Steel Using Sensor Array	Felix N. Kusenberger, Albert S. Lozano, Wilson B. Tarver	U.S. Dept of Transportation
4,525,645	6/25/1985	Cylindrical Bender-Tube Vibration Transducer	Donald J. Shirley, Thomas E. Owen	SwRI
4,524,466	6/25/1985	Continuous Rotation Reversible Pitch Axial Thrust Heart Pump	Charles W. Hall, Orin M. Anderson	SwRI
4,523,294	6/11/1985	Character Spaced Justification Method & Apparatus	Bryan D.C. Winn	SwRI
4,514,691	4/30/1985	Baggage Inspection Apparatus & Method for Determining Presences of Explosives	Armando De Los Santos, James D. King, William L. Rollwitz, George A. Matzkanin, Phillip A. Hornung	SwRI
4,513,576	4/30/1985	Gas Pressure Operated Power Source	Edwin W. Dibrell, Charles D. Wood	Sponsored
4,503,393	3/5/1985	Method & Apparatus for Detecting Flaws in the Threaded End of an Elongate Member Using Electromagnetic Excitation and Automated Scanning Sensor	Felix N. Kusenberger, William D. Perry, Floyd A. Balter, Mark C. Moyer, Clifford W. Peterson, Cecil M. Teller	Sponsored
4,502,331	3/5/1985	Method for Ultrasonic Inspection of Turbine Disc Rims	Gurvinder P. Singh	SwRI
4,498,231	2/12/1985	Thin Film Strain Transducer	James L. Rand	U.S. NASA
4,497,209	2/5/1985	Nondestructive Testing of Stress in a Ferromagnetic Structural Material Utilizing Magnetically Induced Velocity Change Measurements	Hegeon Kwun, Cecil M. Teller	SwRI
4,494,065	1/15/1985	Electric Capacity Measurement of Erratically Shorted Capacitors	Harvey S. Benson,	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
4,475,953	10/9/1984	Emulsion and Method of Making Same	Allen C. Ludwig, Larry W. Wolter, Henry F. Frazier	SwRI
4,475,168	10/2/1984	Performance Indicator for Compressor Analogs	Morton E. Brown	Sponsored
4,467,283	8/21/1984	Electrical Geophysical Exploration System with Addressable Current Probes	Thomas E. Owen, Glenn T. Darilek, Wendell R. Peters, Edward L. Bryan	Sponsored
4,451,178	5/29/1984	Method for Dispersing or Arresting Lava Flow	Wilfred E. Baker, Joseph Sperozza, James C.C. Liu	U.S. Army
4,439,249	3/27/1984	Automated Cutting of Plate Steel	Gurvinder P. Singh, William D. Jolly	Sponsored
4,435,984	3/13/1984	Ultrasonic Multiple-Beam Technique for Detecting Cracks in Bimetallic or Coarse-Grained Materials	George J. Gruber	SwRI
4,431,447	2/14/1984	Corrosion Resistant Weld Overlay Cladding Alloy & Weld Deposit	Wilbur R. Schick	SwRI
4,429,371	1/31/1984	Relative Horsepower Indicator	Morton E. Brown	Sponsored
4,425,808	1/17/1984	Thin Film Strain Transducer	James L. Rand	U.S. NASA
4,424,867	1/10/1984	Heat Hardening Sealant-Gel for Flexible Couplings	William A. Mallow	Sponsored
4,424,571	1/3/1984	Reciprocating Compressor Analog	Carl E. Edlund	Sponsored
4,419,735	12/6/1983	Signal Source for Compressor Analog	Morton E. Brown	Sponsored
4,419,624	12/6/1983	Apparatus for Phase Measurement	Morton E. Brown	Sponsored
4,417,164	11/22/1983	Mechanical Valve Analog	Carl E. Edlund	Sponsored
4,416,229	11/22/1983	Fuel Injector for Diesel Engines	Charles D. Wood	SwRI
4,414,227	11/8/1983	Method for Repelling Birds, Especially Woodpeckers	E.E. Dean, Leon M. Adams	SwRI
4,409,899	10/18/1983	Acoustic Amplitude-Doppler Target Ranging System	Samuel J. Tomlinson, Sr	U.S. Air Force
4,408,533	10/11/1983	Acoustic Amplitude-Threshold Target Ranging System	Thomas E. Owen, Sidney A. Suhler, Wendell R. Peters	U.S. Air Force

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
4,408,160	10/4/1983	Acoustic Barkhausen Stress Detector Apparatus & Method	James D. King, Gary L. Burkhardt, George A. Matzkanin, John R. Barton	SwRI
4,406,706	9/27/1983	Yellow Colorant Composition and Paints Utilizing the Same	John M. Dale	SwRI
4,406,500	9/27/1983	Cutting Assembly Including Expanding Wall Segments of Auger	Martin B. Treuhaft, Michael S. Oser	U.S. Dept of Energy
4,404,646	9/13/1983	Piping Network Analog Apparatus	Carl E. Edlund, Cecil R. Sparks	Sponsored
4,403,576	9/13/1983	Fuel System for and a Method of Operating a Spark-Ignited Internal Combustion Engine	Edward Dimitroff, John A. Vitkovits	SwRI
4,400,036	8/23/1983	Corner-Cutting Mining Assembly	John A. Bradley	U.S Dept of Energy
4,390,828	6/28/1983	Battery Charger Circuit	Merle E. Converse, Glenn T. Darilek	Sponsored
4,387,376	6/7/1983	Phase Linear Interferometer System and Method	William M. Sherrill, Douglas N. Travers, Paul E. Martin	U.S. Army
4,352,983	10/5/1982	Method & Apparatus for Measuring Concentration of Suspended Oils In Water	H. Stanley Silvus, Francis M. Newman, Robert K. Swanson	SwRI
4,339,719	7/13/1982	Conductivity Sensor for Monitoring Corrodents Being Deposited in a Steam Turbine	Archie E. Rhines, Steven B. Hugg	Sponsored
4,335,345	6/15/1982	Current Limiting Circuit for Switching Regulator	Merle E. Converse	Sponsored
4,299,128	11/10/1981	Ultrasonic Satellite-Pulse Technique for Characterizing Defects of Arbitrary Shape	George J. Gruber	SwRI
4,296,378	10/20/1981	Apparatus Providing Enhanced Detection of Specimens in Inhomogeneous Fields	J.D. King	SwRI
4,290,816	9/22/1981	Sulfur Compounds & Method of Making Same	Allen C. Ludwig, John M. Dale, Henry F. Frazier	SwRI
4,262,359	4/14/1981	Fire V Insertion Unit	William E. Cory, Allen B. Cunningham	U.S. Air Force
4,249,131	2/3/1981	Method and Apparatus for Measuring Electrostatic Charge Density	Thomas E. Owen	U.S. Dept of Commerce

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
4,244,053	1/6/1981	Privacy Communication Method & System	Paul E. Martin, Marvin R. Clinch, Calvin R. Graf, Robert B. Fenwick	U.S. Air Force
4,221,597	9/9/1980	Additive for Improved Performance of Silicate Cement	William A. Mallow	Sponsored
4,216,476	8/5/1980	Digital Electronic Commutator for Radio Direction Finding System	Richard Lorenz, Paul E. Martin	U.S. Navy
4,210,103	7/1/1980	Fuel System for and a Method of Operating a Spark-Ignited Internal Combustion Engine	Edward Dimitroff, John A. Vitkovits	SwRI
4,207,572	6/10/1980	Skywave DF Antenna System	Jackie E. Hipp, Douglas N. Travers, Terence C. Green, William M. Sherrill, Richard L. Johnson	SwRI
4,197,478	4/8/1980	Electronically Tunable Resonant Accelerometer	Howard S. Silvus	SwRI
4,194,574	3/25/1980	Draft Power Sensor & Method for Improving Performance in Earth-Moving Equipment	Harvey S. Benson, Charles D. Wood	SwRI
4,181,943	1/1/1980	Speed Control Device for Trains	Lloyd I. Mercer, Sr., Steven B. Hugg	SwRI
4,173,455	11/6/1979	Fire-Safe Hydrocarbon Fuels	George E. Fodor, William D. Weatherford, Bernard R. Wright	U.S. Army
4,168,860	9/25/1979	Multi-Purpose Convertible Seat Construction	Luis R. Garza, William J. Astleford	Sponsored
4,166,972	9/4/1979	NMR Discrimination Apparatus and Method Therefor	William L. Rollwitz, James D. King, George A. Matzkanin	SwRI
4,165,649	8/28/1979	Apparatus & Method for Ultrasonic Inspection of Highly Attenuative Materials	Amos S. Greer, Jr.	SwRI
4,163,477	8/7/1979	Method & Apparatus for Closing Underwater Wells	John L. Johnson, Billy W. Vanzant	SwRI
4,160,386	7/10/1979	Ultrasonic Inspection System Including Apparatus and Method for Tracking and Recording the Location of and Inspection Probe	Jerry L. Jackson, Theodore L. Allen, Wayne T. Flach, William D. Jolly, Steve A. Cerwin	SwRI
4,143,426	3/13/1979	Permanently Attached Artificial Limb	C. William Hall,	U.S. Veterans

# SwRI Patents

11/17/2009

Patent No.	Date of Issue	Title of Invention	Inventor(s)	Assignee
			William A. Mallow, Fred Otis Hoese	Affairs
4,126,106	11/21/1978	Mixed Cycle Internal Combustion Engine	Julius E. Witzky	SwRI
4,113,315	9/12/1978	Combustion Apparatus for Generating Repetitive Explosions	Rosser B. Melton, Jr., John W. Colburn, Jr., Charles D. Wood, III	SwRI
4,100,491	7/11/1978	Automatic Self-Cleaning Ferromagnetic Metal Detector	Francis M. Newman, Jr., H. Stanley Silvus, Jr.	SwRI
4,096,945	6/27/1978	System for Injecting Particulate Material into the Combustion Chamber of a Repetitive Combustion Coating Apparatus	Rosser B. Melton, Elbert M. Hubbard	SwRI
4,074,444	2/21/1978	Method & Apparatus for Communicating with People	Charles J. Laenger, Sr., Sam R. McFarland, Harry H. Peel	SwRI
4,030,939	6/21/1977	Cement Composition	William A. Mallow	SwRI
4,030,347	6/21/1977	Biaxial Capacitance Strain Transducer	Elwood B. Norris, Lester M. Yeakley	Sponsored
4,026,145	5/31/1977	Hydraulic Grip for Tubular Mechanical Properties Specimen	Andrew Nagy, Ulric S. Lindholm, Lester M. Yeakley	U.S. Air Force
4,022,857	5/10/1977	Production of Foamed Sulfur Compositions	John M. Dale, Allen C. Ludwig	Sponsored
4,011,886	3/15/1977	Sleeve Valve	Charles D. Wood	SwRI
4,011,179	3/8/1977	Continuous Sulfur Foam Preparation Using Polyisocyanates	Gar Lok Woo, John M. Dale, Allen C. Ludwig	Sponsored
3,990,903	11/9/1976	Hydrothermal Cement Method of Cementing Well Bores	William A. Mallow,	SwRI
3,974,939	8/17/1976	System for Injecting Particulate Material into the Combustion Chamber of a Repetitive Combustion Coating Apparatus	Rosser B. Melton, Jr., Elbert M. Hubbard	SwRI
3,973,263	8/3/1976	Sensitivity Improvement of Spaced-Loop Antenna by Loop Antenna by Capacitive Gap Loading	Terence C. Green,	U.S. Navy
3,967,761	7/6/1976	System for Injecting Particulate Material into the Combustion Chamber of a Repetitive Combustion Coating Apparatus	Rosser B. Melton, Jr., Elbert M. Hubbard	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
3,950,659	4/13/1976	Method of Producing Transducers with Phase, Area & Depth Controlled Polarization	Norman E. Dixon, William D. Jolly	Sponsored
3,939,477	2/17/1976	Quadrupole Adcock Direction Finder & Antenna Therefor	Terence C. Green, William G. Guion, Douglas N. Travers, William M. Sherrill	SwRI
3,924,897	12/9/1975	Earth Ripper Employing Repetitive Explosions	John W. Colburn, Jr., Charles D. Wood, Ronald J. Mathis	SwRI
3,921,533	11/25/1975	Wheel Assembly for a Vehicle Moving through a Tubular Conduit	Freddy R. Szenasi, Richard M. Baldwin	Sponsored
3,918,944	11/11/1975	Lead Trap	Martin B. Treuhaft, Charles D. Wood	Sponsored
3,918,937	11/11/1975	Particulated Lead Trap System	John C. Holloway, Herbert W. Barch, Martin B. Treuhaft, Charles D. Wood	Sponsored
3,915,381	10/28/1975	Method & Apparatus for Applying Particulate Coating Material to a Work Piece	Rosser B. Melton, John M. Clark, Ronald Mathis, William D. Weatherford, Charles D. Wood	SwRI
3,913,015	10/14/1975	Tuned Current Probe	Edwin L. Bronaugh, Roger A. Southwick	U.S. Air Force
3,910,494	10/7/1975	Valveless Combustion Apparatus	Rosser B. Melton, Jr.	SwRI
3,910,112	10/7/1975	Flow Meter	C. Richard Gerlach	SwRI
3,898,038	8/5/1975	Method & Apparatus for Sterilizing a Biologically Contaminated Enclosure	Eugene L. Anderson	SwRI
3,893,578	7/8/1975	System for Injecting Particulate Material into the Combustion Chamber of a Repetitive Combustion Coating Apparatus	Rosser B. Melton, Jr., Elbert M. Hubbard	SwRI
3,880,568	4/29/1975	Combustion Method & Apparatus for Generating Repetive Explosions	Rosser B. Melton, Jr., John W. Colburn, Jr., Charles D. Wood	SwRI
3,875,034	4/1/1975	Method and Apparatus for Odor Abatement	Leon M. Adams, Henry F. Hamil	Sponsored

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
3,856,539	12/24/1974	Solidified Silica Foam Product & Process	William A. Mallow, Richard A. Owen, Ethelbert J. Baker, Jr.	Sponsored
3,840,232	10/8/1974	Frangible Flying Target	Allen C. Ludwig, John M. Dale	Sponsored
3,839,848	10/8/1974	Method & Apparatus for Cleaning Air	Charles D. Wood, John M. Clark, Jr.	SwRI
3,824,596	7/16/1974	Automatic Sector Indicating Direction Finder System	William G. Guion, Terence C. Green	SwRI
3,823,608	7/16/1974	Torque Transducer	Pontie Pantermuehl, George F. Munsch	Sponsored
3,823,019	7/9/1974	Mine Wall Coating	John M. Dale, Allen C. Ludwig	U.S. Dept of Interior
3,822,531	7/9/1974	Device for Agglomerating and Separating Particulates from a Gas	John P. Wisnewski, Martin B. Treuhaft	Sponsored
3,815,135	6/4/1974	Direction Finding Interferometer for a Linear FM Signal	Paul E. Martin, William M. Sherrill, Terence C. Green	U.S. Air Force
3,801,346	4/2/1974	Method for Applying Particulate Coating Material to a Work Piece	Rosser B. Melton, Jr., John M. Clark, Jr., Ronald J. Mathis, Wm. D. Weatherford, Jr., Charles D. Wood	Sponsored
3,792,348	2/12/1974	Method for Determining Stress in a Ferromagnetic Member Using Mangetoabsorption	William L. Rollwitz, John Arambula, John P. Claassen	SwRI
3,787,144	1/22/1974	Explosive Pumping & Dredging Method and Apparatus	Charles D. Wood	SwRI
3,783,370	1/1/1974	Method and Circuit for Compensating Barkhausen Signal Measurements in Magnetic Materials Having a Variable Geometry	James A. Birdwell, John R. Barton, Clarence G. Gardner	SwRI
3,782,867	1/1/1974	Fluid Power Converter	Charles R. Gerlach, Edgar C. Schroeder	Sponsored
3,773,469	11/20/1973	Method and Apparatus for Determining the Amount of Certain Components in a Substance, Such as Inorganic Carbon and the like	Leland L. Hiser, Clarence A. Boldt, David S. Tarazi, Oscar Saenz	SwRI
3,766,831	10/23/1973	Compound Axial Torsional Hydraulic Actuator	Lester M. Yeakley	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
3,764,892	10/9/1973	Spectroscopic Apparatus	William L. Rollwitz	SwRI
3,756,416	9/4/1973	Apparatus Having a Filter Panel Disposed Across a Fluid Passageway	Charles D. Wood	SwRI
3,755,825	9/4/1973	Artificial Heart Consisting of a Biventricular Pump with Control Mechanisms for Total Replacement of Human Heart	Michael E. DeBakey, William Hall	U.S. Dept of Health, Education, and Welfare
3,752,240	8/14/1973	Method of and Apparatus for Providing an Impact to a Vehicled Carried Penetrating Tool	Charles D. Wood, John M. Clark	SwRI
3,750,837	8/7/1973	Explosive Seismic Energy Source with Quick Release Valve	Charles D. Wood	SwRI
3,746,971	7/17/1973	Sampling Spinning Cell for NMR of Flowing Systems	William H. Storey, Jr., Daniel A. Montalvo	U.S. Army
3,744,018	7/3/1973	Method of and Apparatus for Producing a Repetitive Seismic Impulse	Charles D. Wood	SwRI
3,741,898	6/26/1973	Foamed Product from Sodium Silicate and Process of Manufacture Thereof	William A. Mallow, Richard A. Owen, Ethelbert J. Baker, Jr.	SwRI
3,729,699	4/24/1973	Underwater Wet Electrical Connector	Edward M. Briggs, William E. Oakey, Rodgers E. Rimmer	SwRI
3,703,886	11/28/1972	Pumpless Stratified Charge Gas Engine	Julius E. Witzky	Sponsored
3,680,287	8/1/1972	Air Filter	Charles D. Wood, S.A. Olsen, Jimmie C. Potter	Sponsored
3,643,455	2/22/1972	Compositions for Absorption Refrigeration System	William E. Hensel, Jr., William W. Harlowe, Jr.	Sponsored
3,643,181	2/15/1972	Amplitude and/or Frequency-Modulated Paramagnetic Resonance	William A. Stirrat, William L. Rollwitz, Gilbert A. Persyn	U.S. Army
3,634,101	1/11/1972	Fresh Peach Flavor Addictive Composition and Method of Enhancing the Flavor of Freeze-Dehydrated Peaches	John W. Rhoades, James W. Register, Jr., John D. Millar	U.S. Navy
3,634,098	1/11/1972	Fresh Apricot Flavor Addictive Composition and Method of Enhancing the Flavor of Freeze-Dehydrated Apricots	John W. Rhoades, James W. Register, Jr., John D. Millar	U.S. Navy

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
3,627,456	12/14/1971	Vanes for Fluid Power Converter	Charles R. Gerlach	Sponsored
3,623,116	11/23/1971	Ferrite Core Crossed Space Loop Antenna	Terry C. Green, Ruell Solberg, Jr.	U.S. Navy
3,612,986	10/12/1971	Sensing Apparatus for Use with Magnetoabsorption Apparatus Using Semicylindrical Coils	William L. Rollwitz, John P. Classen	SwRI
3,609,978	10/5/1971	Method of Remotely Constructing a Room	Jarvis D. Michie, Robert C. DeHart	U.S. Atomic Energy Commission
3,608,990	9/28/1971	Container Having Internal Object Support Means & Pivoted Top Section	Ethelbert J. Baker, William H. Arlitt	SwRI
3,600,116	8/17/1971	Air-Control System for Apparatus Displacing Material by Combustive Explosions	John M. Clark, Allan R. Nye, Charles D. Wood	SwRI
3,596,262	7/27/1971	Telemetry Measuring Apparatus	William L. Rollwitz, Harvey S. Benson	SwRI
3,585,577	6/15/1971	Ultrasonic Transceiver	William L. Rollwitz, Harvey S. Benson	SwRI
3,581,077	5/25/1971	Electrical Analog Model for Fluid Flow Transmission System	Glenn Damewood, Cecil R. Sparks, James D. King	Sponsored
3,578,417	5/11/1971	Vaporizing Sulfur from Ore by Direct Contact with Heated Pebbles	John M. Dale	Sponsored
3,574,404	4/12/1971	Digging Apparatus	Thomas J. Hogan	Sponsored
3,572,273	3/23/1971	Apparatus for Breaking a Layer of Ice on a Body of Water by Repetitive Combustive Explosions	Charles D. Wood	SwRI
3,572,098	3/23/1971	Mass Measuring Instrument Spring System	Joseph W. Fogwell	U.S. Navy
3,556,236	1/19/1971	Detector Systems	William E. Cory, Raymond B. Wangler	Sponsored
3,527,197	9/8/1970	Indirect Blood Pressure Measurement	Ray W. Ware, Charles J. Laenger, Thomas E. Owen	SwRI
3,524,815	8/18/1970	Lithium Bromide-Lithium Compositions for Absorption Refrigeration System	William E. Hensel, Jr., William W. Harlowe, Jr.	Sponsored
3,508,266	4/21/1970	Solid State Commutator	Paul E. Martin	U.S. Navy

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
3,496,633	2/24/1970	Method of Producing an Improved Elastomeric Strain Gauge	Jarvis D. Michie, Leonard U. Rastrelli, Eugene L. Anderson	U.S. Navy
3,490,024	1/13/1970	Direction Finder	William M. Sherrill, Richard Lorenz	U.S. Navy
3,461,577	8/19/1969	Method of & Apparatus for Materials Displacing Material (REDSOD)	John M. Clark, Jr., Robinson N. Brown, Roger H. Hemion	SwRI
3,446,298	5/27/1969	Weighing Apparatus	William E. Cory, Melvin A. Schrader	Sponsored
3,440,064	4/22/1969	Fire-Retardant Sulphur Compositions	Allen C. Ludwig	Sponsored
3,436,538	4/1/1969	Method of Measuring Fissionable Material Content of Fuels	Demetrios L. Basdekas	U.S. Atomic Energy Commission
3,431,551	3/4/1969	Depth Measuring Ultrasonic Transceiver	William L. Rollwitz, Harvey S. Benson	SwRI
3,427,872	2/18/1969	Method & System for Investigating the Stress Condition of Magnetic Materials	Richard W. Leep, Richard L. Pasley	SwRI
3,425,399	2/4/1969	Stratified Charge Gas Engine	Raymond G. Ward, Julius E. Witzky	Sponsored
3,412,243	11/19/1968	X-ray Apparatus for Measuring Internal Strains in an Elastomeric Body Having Spaced Embedded Therein	Russell D. Williams, Eugene L. Anderson, Leonard U. Rastrelli	U.S. Navy
3,395,564	8/6/1968	Elastomeric Strain Module & Method of Calibration	Leonard W. Rastrelli, Eugene L. Anderson	U.S. Navy
3,389,194	6/18/1968	Encapsulation-Submerged Nozzle	George R. Somerville	SwRI
3,379,970	4/23/1968	Magnetic Crack Detector for Ferromagnetic Tubing	Felix N. Kusenberger, Herman F. Barsun, Joseph W. Fogwell	U.S. Navy
3,360,907	1/2/1968	Apparatus for Cleaning Air Filters	John M. Clark, Jr., Robinson W. Brown, Ross F. Meriwether	SwRI
3,357,170	12/5/1967	Railroad Track Weight Detector	William E. Cory, Jack B. Johnson	Sponsored
3,350,924	11/7/1967	Apparatus for Ultrasonic Inspection	James D. King	SwRI

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
3,338,092	8/29/1967	Dynamic Biaxial Testing Machine	Ulric S. Lindholm, Luis R. Garza, Ethelbert J. Baker, Jr.	U.S. Army
3,337,355	8/22/1967	Solid Foam Sulphur and Process for the Manufacture Thereof	John M. Dale, Allen C. Ludwig	Southwest Patents, Inc.
3,329,954	7/4/1967	Eight Loop Antenna & Method of Scanning Same	Douglas N. Travers	U.S. Navy
3,324,708	6/13/1967	Bearing Test Assembly with Rotary Cage Follower	Horace E. Staph, Walter A. Gunkel, George F. Munsch	U.S. Air Force
3,316,115	4/25/1967	Marking Composition	Marion D. Barnes, John M. Dale	Sponsored
3,310,612	3/21/1967	Encapsulating Method & Apparatus Sloped Head	George R. Somerville	SwRI
3,304,528	2/14/1967	Elastomeric Strain Gauge	Leonard W. Rastrelli, Jarvis D. Michie, Eugene L. Anderson	U.S. Navy
3,304,158	2/14/1967	Purification of Dark Sulfur	John M. Dale	Sponsored
3,289,468	12/6/1966	Ultrasonic Transducer Positioning Apparatus	William R. Van Der Veer, Walter Gunkel	SwRI
3,289,135	11/29/1966	Strain Gauges	Eugene L. Anderson, Leonard U. Rastrelli	U.S. Navy
3,283,569	11/8/1966	Method & Apparatus for Indicating Performance Characteristics of Reciprocating Piston Machines	James D. King, Carl E. Edlund	Sponsored
3,276,249	10/4/1966	Ultrasonic Measuring Apparatus	James D. King	Sponsored
3,255,626	6/14/1966	Ultrasonic Apparatus	William R. Van Der Veer	SwRI
3,244,973	4/5/1966	Magnetic Inspection Method	Herbert I. Hoffman	SwRI
3,221,544	12/7/1965	Ultrasonic Inspection System	Walter A. Gunkel	SwRI
3,209,736	10/5/1965	Engine	Julius E. Witzky	SwRI
3,177,861	4/13/1965	Internal Combustion Engine	Roy D. Quillian	SwRI
3,159,227	12/1/1964	Weighing Apparatus	Seymour H. Raskin, Frank G. Vitiello	Sponsored
3,154,059	10/27/1964	Stratified Spark Ignition Internal Combustion Engine	Julius E. Witzky,	SwRI

# SwRI Patents

11/17/2009

Patent No.	Date of Issue	Title of Invention	Inventor(s)	Assignee
			John M. Clark, Jr.	
3,130,850	4/28/1964	Collapsible Container	William E. Oakey, Ethelbert J. Baker, Willis M. Mynatt, Julius W. Millard, Norman Weisberg	SwRI
3,097,532	7/16/1963	Liquid Sampling Device	Robinson W. Brown, William E. Oakey	Sponsored
3,096,434	7/2/1963	Multiple Integration Flow Computer	James D. King	Sponsored
3,093,827	6/11/1963	Three Loop Direction Finder Antenna for Shipboard Use	Douglas N. Travers	U.S. Navy
3,056,613	10/2/1962	Quick-Break Maritime Coupling	John M. Dale	Sponsored
3,056,294	10/2/1962	Volumetric Drum Meter	Robinson W. Brown, William E. Oakey	Sponsored
3,045,175	7/17/1962	Second-Harmonic Moisture Meter for Continuous Flow	William L. Rollwitz	Sponsored
3,015,128	1/2/1962	Encapsulation-Centrifugal Head	George R. Somerville	SwRI
3,006,649	10/31/1961	Animal Immobilizer	Edward J. Gesick, Willis L. Mynatt, John W. McCoy	SwRI
3,005,343	10/24/1961	Volumetric Drum Meter	Robinson W. Brown, William E. Oakey	Sponsored
2,951,638	6/6/1960	Gas Pumping System Analog	John V. Hughes, William L. Rollwitz	Sponsored
2,885,633	5/5/1959	Electrical Crevasse Detector	John C. Cook	U.S. Army
2,880,172	3/31/1959	Process for Extinguishing Burning Magnesium & Other Combustible Metals	Roy T. McCutchan	SwRI
2,834,166	5/13/1958	Packaging Machine	Joseph W. Fogwell, Herbert Hoffman, William Oakey, Willis L. Donaldson	Sponsored
2,715,013	8/9/1955	Apparatus For Erecting a Building	Thomas B. Slick	Sponsored
2,686,420	10/11/1955	Method of Erecting Buildings	Philip N. Youtz	Sponsored

# SwRI Patents

11/17/2009

<b>Patent No.</b>	<b>Date of Issue</b>	<b>Title of Invention</b>	<b>Inventor(s)</b>	<b>Assignee</b>
2,535,099	12/26/1950	Brush Puller	Thomas Slick	Sponsored
H2,116	4/5/2005	Method for Detecting, Locating and Characterizing Single and Multiple Fluid-Filled Fractures in Fractured Formations	Jorge Octavio Parra and Pei-Cheng Xu	SwRI
H1,793	4/6/1999	Thermal Transient Test Thermal Transient Test System	R.H. Peterson, K.S. Pickens	SwRI
RE40,515	9/23/2008	Method and Apparatus for Inspecting Pipelines from an In-Line Inspection Vehicle Using Magnetostrictive Probes	Hegeon Kwun, Sang-Young Kim	SwRI
RE40,129	3/4/2008	Wide Bandwidth Multi-Mode Antenna	Thomas J. Warnagiris	SwRI
RE37,718	5/28/2002	Ion Beam Modification of Bioactive Ceramics to Accelerate Biointegration of Said Ceramics	Cheryl Blanchard, Geoffrey Dearnaley, James Lankford, Jr.	SwRI
RE31,575	5/1/1984	Sulfur Compounds and Method of Making Same	Allen C. Ludwig, John M. Dale, Henry F. Frazier	SwRI