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June 3, 2018

Issued United States Patents.

Each entry below shows co-inventors (if any), issue date, title, and assignment. Unless specifically noted for a given patent, I was the sole inventor. “(DOE)” indicates assignment to the United States Department of Energy per SRTC contract requirements. Patent 6,535,767 and all subsequent ones have also been filed internationally.

<u>Patent #</u>	<u>Issue Date</u>	<u>Title</u>
4,945,953	08/07/90	Surface Mount Component Jig (DOE)
4,952,892	08/28/90	Waveguide Impedance Matching Method and Apparatus (DOE)
4,979,397	12/25/90	In-Line Rotating Torque Sensor with On-Board Amplifier (DOE)
5,030,011	01/11/91	Mixing Blade System for High-Resistance Media (DOE)
5,039,978	06/13/91	Analog Graphic Display Method and Apparatus (DOE)
5,046,371	09/10/91	In-Line Rotating Capacitive Torque Sensor (DOE)
5,054,023	10/01/91	"Smart Watchdog" Safety Switch (DOE)
5,119,014	11/08/91	Sequential Power-Up Circuit (DOE)
5,143,149	09/01/92	Wastewater Heat Recovery Apparatus (DOE)
5,147,471	09/15/92	Solder for Oxide-Layer-Building Metals and Alloys (DOE)
5,157,426	10/20/92	False Color Viewing Device (DOE)
5,157,465	10/20/92	Universal Fiber-Optic C.I.E. Colorimeter (DOE)
5,159,318	10/27/92	Universal Single-Point Liquid Level Sensor (DOE)
5,189,359	02/23/93	Solid State Safety Jumper Cables (DOE)
5,198,870	03/30/93	Atomic Line Emission Analyzer for Hydrogen Isotopes (DOE)
5,204,671	04/20/93	Random One-of-"N" Selector (DOE)
5,217,009	06/08/93	Compact Biomedical Pulsed Signal Generator for Bone Tissue Stimulation (DOE)
5,245,619	03/08/93	Generation of Low-Divergence Laser Beams (DOE)
5,251,490	10/12/93	Ultrasonic Fluid Flow Measurement Method and Apparatus (DOE)
5,259,382	05/21/93	Optical Transcutaneous Bilirubin Detector (DOE)
5,296,715	12/28/93	Optically-Isolated Signal Coupler with Linear Response (DOE)
5,314,735	05/24/94	Surface Coating for Prevention of Crust Formation (DOE)
5,315,884	05/31/94	Capacitive Proximity Sensor (DOE)
5,316,649	03/03/94	High-Frequency Reference Electrode (DOE)
5,317,253	02/09/94	Concealed Wire Tracing Apparatus (DOE)
5,334,847	05/09/94	Composition for Radiation Shielding (DOE)
5,388,446	02/14/95	Method and Apparatus for Container Leakage Testing (DOE)
5,405,231	04/11/95	Conveyor with Rotary Airlock Apparatus (DOE)
5,405,588	04/11/95	Process for Removing Cadmium from Scrap Metal (DOE)

5,413,596	11/22/94	Digital Electronic Bone-Growth Stimulator (DOE)
5,424,731	06/13/95	Remote Two-Wire Data Entry Method and Device (DOE)
5,431,148	07/11/95	Immersible Solar Heater for Fluids (DOE)
5,463,377	10/31/95	Apparatus for Detecting the Presence of a Liquid (DOE)
5,499,529	03/19/96	Detecting Small Holes in Packages (with JR Cadieux) (DOE)
5,499,597	03/19/96	Optical Temperature Indicator Using Thermo-chromic Semiconductors (DOE)
5,547,283	08/20/98	Optical Temperature Sensor using Thermo-chromic Semiconductors (DOE)
5,722,290	03/03/98	Closed-Field Capacitive Liquid Level Sensor (DOE)
5,772,328	06/30/98	Optical Temperature Sensor using Thermo-chromic Semiconductors (DOE)
5,860,711	01/19/99	Isolation Enclosure (with KW Haerer; Equitech Intl.)
6,011,994	01/04/00	Multipurpose Biomedical Pulsed Signal Generator. (Equitech Intl.)
6,121,716	09/19/00	Apparatus and Method for Prevention of Cracking in Welded Brittle Alloys (with RM Younkens) (DOE)
6,321,119	11/20/01	Pulsed Signal Generator for Bioelectric Stimulation and Healing Acceleration (Equitech Int'l)
6,417,651	07/09/02	Digitally-Controlled AC Voltage Stabilizer (Equitech Intl.)
6,535,767	03/18/03	Apparatus and Method for Bioelectric Stimulation, Healing Acceleration and Pain Relief (Healthonics, Inc.)
7,117,034	10/03/06	Apparatus and Method for Bioelectric Stimulation, Healing Acceleration, Pain Relief, or Pathogen Devitalization (Healthonics, Inc.)
7,840,272	11/23/10	Methods for Modulating Osteochondral Development Using Bioelectrical Stimulation (with TM Ganey and SL Gordon; Healthonics, Inc.)
2008/0039901, published 02/14/08; did not issue		Methods for Modulating Chondrocyte Proliferation Using Pulsing Electric Fields (with SL Gordon, TM Ganey and RJ Fitzsimmons; Healthonics, Inc.)
8,159,312	04/17/12	Method and System for Signal Coupling and Direct Current Blocking (MedRelief, Inc.)
RE43,374	05/08/12	Apparatus and Method for Bioelectric Stimulation, Healing Acceleration and Pain Relief (reissue of 6,535,767; MedRelief, Inc.)
8,785,196	07/22/14	Methods for Modulating Osteochondral Development Using Bioelectrical Stimulation (with TM Ganey and SL Gordon; MedRelief, Inc.)
8,960,440	02/24/15	Blister Pack Content Usage Monitoring (VeriMed Holdings, LLC)
9,630,001	04/25/17	Methods for Modulating Osteochondral Development Using Bioelectrical Stimulation (with TM Ganey and SL Gordon; MedRelief, Inc.)

9,845,452	12/19/17	Methods for Modulating Osteochondral Development Using Bioelectrical Stimulation (with TM Ganey and SL Gordon; MedRelief, Inc.)
9,981,411	5/29/2018	Structural Composition and Method (with Guerry E. Green; Marhaygue, LLC.)