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Nuclear Engineering Division: Patents Listing (2000 – present)

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#	Title	Patent #	Issued	Inventors
79	Transient multivariable sensor evaluation	9,574,903	02/21/2017	R. Vilim, A. Heifetz
78	Designed porosity materials in nuclear reactor components	9,437,335	09/06/2016	A. Yacout, M. Pellin, M. Stan
77	Superabsorbing gel for actinide, lanthanide, and fission product decontamination	9,359,582	06/07/2016	M. Kaminski, C. Mertz
76	Methods for producing Cu-67 radioisotope with use of a ceramic capsule for medical applications	9,312,037	04/12/2016	D. Ehst, J. Willit
75	Microfluidic process monitor for industrial solvent extraction system	9,233,859	01/12/2016	A. Gelis, C. Pereira, K. Nichols
74	Method and system for determining radiation shielding thickness and gamma-ray energy	9,212,905	12/15/2015	R. Klann, R. Vilim, S. de la Barrera
73	Electrorefiner system for recovering purified metal from impure nuclear feed material	9,150,975	10/06/2015	J. Berger, M. Williamson, S. Wiedmeyer, J. Willit, L. Barnes, R. Blaskovitz
72	Electron linac for medical isotope production with improved energy efficiency and isotope recovery	9,129,714	09/08/2015	J. Noonan, D. Walters, M. Virgo, J. Lewellen
71	Interferometric millimeter wave and THz wave doppler radar	9,103,904	08/11/2015	S. Liao, N. Gopalsami, S. Bakhtiari, A. Raptis, T. Elmer
70	Radar detection of radiation-induced ionization in air	9,086,487	07/21/2015	N. Gopalsami, A. Heifetz, H.T. Chien, S. Liao, E. Koehl, A. Raptis
69	Nanoparticles for heat transfer and thermal energy storage	9,080,089	07/14/2015	D. Singh, S. Cingarapu, E. Timofeeva, M. Moravek
68	Electrolytic oxide reduction system	9,017,527	04/28/2015	S. Wiedmeyer, L. Barnes, M. Williamson, J. Willit, J. Berger
67	Modular anode assemblies and methods of using the same for electrochemical reduction	8,956,524	02/17/2015	S. Wiedmeyer, L. Barnes, M. Williamson, J. Willit
66	Cathode scraper system and method of using the same for removing uranium	8,945,354	02/03/2015	M. Williamson, S. Wiedmeyer, J. Willit, R. Blaskovitz
65	Compressive passive millimeter wave imager	8,941,061	01/27/2015	N. Gopalsami, S. Liao, T.W. Elmer, E.R. Koehl, A. Heifetz, A.C. Raptis

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64	Thin film application device and method for coating small aperture vacuum vessels	8,940,140	01/27/2015	D. Walters
63	Method for fluidizing and coating ultrafine particles, device for fluidizing and coating ultrafine particles	8,936,831	01/20/2015	J. Li, Y. Liu
62	Source localization using multiple units of a tight-pitched detector array	8,930,165	01/06/2015	R. Vilim, R. Klann
61	Modular cathode assemblies and methods of using the same for electrochemical reduction	8,900,439	12/02/2014	S.G. Wiedmeyer, L.A. Barnes, M.A. Williamson, J.L. Willit
60	Cathode power distribution system and method of using the same for power distribution	8,882,973	11/11/2014	M. Williamson, S. Wiedmeyer, E. Koehl, J. Bailey, J. Willit, L. Barnes, R. Blaskovitz
59	Method for improving catalyst function in auto-thermal and partial oxidation reformer-based processors	8,814,964	08/26/2014	S. Ahmed, S.H.D. Lee, R.K. Ahluwalia, D. Papadias
58	Anode shroud for off-gas capture and removal from electrolytic oxide reduction system	8,771,482	7/08/2014	J. Bailey, L. Barnes, S. Wiedmeyer, M. Williamson, J. Willit
57	Continuous recovery system for electrorefiner system	8,746,440	06/10/2014	M. Williamson, S. Wiedmeyer, J. Willit, L. Barnes, R. Blaskovitz
56	Millimeter wave sensor for far-field standoff vibrometry	8,686,362	04/01/2014	S. Bakhtiari, N. Gopalsami, T.W. Elmer, A.C. Raptis
55	Anode-cathode power distribution systems and methods of using the same for electrochemical reduction	8,636,892	01/28/2014	E. Koehl, L. Barnes, S. Wiedmeyer, M. Williamson, J. Willit
54	Bus bar electrical feedthrough for electrorefiner system	8,598,473	12/03/2013	M. Williamson, S. Wiedmeyer, J. Willit, L. Barnes, R. Blaskovitz
53	Lid Actuation System for Shielded Cask	8,550,283	10/08/2013	J.W. Morman, D. Preuss, D. Nestor
52	Methods for making and processing metal targets for producing Cu-67 radioisotope for medical applications	8,526,561	09/03/2013	D.A. Ehst, D.L. Bowers
51	Enhanced integrated operation blender based sterile medical ice slurry production device	8,505,315	08/13/2013	K. Kasza, F. Shareef, B. Fischer
50	Method for implementing depth deconvolution algorithm for enhanced thermal tomography 3D imaging	8,465,200	06/18/2013	J.G. Sun

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49	Actinide and lanthanide separation process (ALSEP)	8,354,085	01/15/2013	A. Guelis
48	Autothermal and partial oxidation reformer-based fuel processor, method for improving catalyst function in autothermal and partial oxidation reformer-based processors	8,349,035	01/08/2013	S. Ahmed, D.D. Papadias, S.H.D. Lee, R.K. Ahluwalia
47	Surface acoustic wave probe implant for predicting epileptic seizures	8,165,682	04/24/2012	N. Gopalsami, S. Kulikov, I. Osorio, A.C. Raptis
46	High-temperature potentiometric oxygen sensor with internal reference	8,057,652	11/15/2011	J.L. Routbort, D. Singh, P.K. Dutta, R. Ramasamy, J.V. Spirig, S. Akbar
45	Compact electrochemical bifunctional NO _x /O ₂ sensors with internal reference for high temperature applications	8,012,323	09/06/2011	D. Singh, J. Routbort, P. Dutta, J.V. Spirig, and J. Chan Yang
44	Computed radiography system for mammography	8,008,642	08/30/2011	S. Schweizer, J. A. Johnson and A. Lubinsky
43	Fuel Processing Device	7,988,925	08/02/2011	R. K. Ahluwalia, S. Ahmed, and S. H. D. Lee
42	Passive millimeter wave spectrometer for remote detection of chemical plumes	7,888,645	02/15/2011	N. Gopalsami, S. Bakhtiari, A.C. Raptis, T.W. Elmer
41	Photoacoustic spectroscopy system and technique for remote sensing of explosives and toxic chemicals	7,861,574	01/04/2011	S.-H. Sheen, A.C. Raptis, H.-T. Chien
40	Method for Analyzing Multi-Layer Materials from One-Sided Pulsed Thermal Imaging	7,769,201	08/03/2010	J. Sun
39	Joining of Advanced Materials by Plastic Deformation	7,722,731	5/25/2010	J.L. Routbort, D. Singh, K.C. Goretta, F. Gutierrez-Mora
38	Surface modification to improve fireside corrosion resistance of Fe-Cr ferritic steels	7,678,471	3/16/2010	J.-H. Park, K. Natesan, D.L. Rink
37	Photoacoustic Spectroscopy System and Technique for Remote Sensing of Explosives and Toxic Chemicals	7,644,606	1/12/2010	S.-H. Sheen, A.C. Raptis, H.-T. Chien

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36	Method and Apparatus for Ultrasound Phased Array Testing of Bearing Balls	7,617,733	11/7/2009	C.M. Deemer, W.A. Ellingson, J.S. Steckenreider
35	Optical Filter for Flash Lamps in Pulsed Thermal Imaging	7,538,938	5/29/2009	J. Sun
34	Passive millimeter wave spectrometer for remote detection of chemical plumes	7,495,218	2/24/2009	N. Gopalsami, S. Bakhtiari, A.C. Raptis, T.W. Elmer
33	Methods of using a laser to perforate composite structures of steel casing, cement and rocks	7,487,834	2/10/2009	C.B. Reed, Z. Xu
32	Tracking of moving radioactive sources	7,465,924	12/16/2008	R.T. Klann, R.B. Vilim, Y.S. Kim
31	Fibrous ceramic monoliths made from multi-phase ceramic filaments	7,452,837	11/18/2008	K. C. Goretta, D. Singh, B.J. Polzin, T.A. Cruse, J.J. Picciolo
30	Method for inducing hypothermia	7,422,601	9/9/2008	L. B. Becker, (1) T. Vanden Hoek, K. E. Kasza
29	Methods of using a laser to spall and drill holes in rocks	7,416,258	8/26/2008	C.B. Reed, Z. Xu, R.A.Parker, R.M. Graves, T.W. Stone
28	Medical ice slurry production device	7,389,653	6/24/2008	K. E. Kasza, J. Oras, H.-J. Son
27	Method for thermal tomography of thermal effusivity from pulsed thermal imaging	7,365,330	4/29/2008	J.G. Sun
26	Method to seal reactive materials under vacuum	7,350,280	4/1/2008	T. C. Wiencek
25	Method for fast start of a fuel processor	7,323,159	1/29/2008	R.K. Ahluwalia, S. Ahmed, S.H.D. Lee
24	Resonance-enhanced dielectric sensing of chemical and biological species	7,223,608	5/29/2007	N. Gopalsami, A. C. Raptis
23	Optical apparatus for laser scattering by objects having complex shapes	7,136,158	11/14/2006	W. A. Ellingson, R. J. Visher

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22	Heat transfer probe	7,118,591	10/10/2006	K. E. Kasza, T.-H. Chien, W. Yu, A. J. Rosengart, J. I. Frank, J. E. Franklin
21	Method for fabricating uranium foils and uranium alloy foils (as filed)	7,100,670	9/5/2006	G. L. Hofman, M. K. Meyer, G. C. Knighton, C. R. Clark
20	Continuous process electrorefiner (as issued)	7,097,747	8/9/2006	J. E. Herceg, J. G. Saiveau, L. Krajtl
19	Method and apparatus for atomizing fluids with a multi-fluid nozzle (as issued)	6,827,296	12/7/2004	V. J. Novick, R. K. Ahluwalia
18	Fissile interrogation using gamma rays from oxygen (as issued)	6,724,852	4/20/2004	D. L. Smith, B. J. Micklich, A. Fessler
17	Nuclear fuel electrorefiner (as issued)	6,689,260	2/10/2004	R. K. Ahluwalia, T. Q. Hua
16	Pocked surface neutron detector (as issued)	6,545,281	4/8/2003	D. S. McGregor, R. T. Klann
15	Eddy Current Technique for Predicting Burst Pressure	6,519,535	2/11/2003	M. C. Petri, D. S. Kupperman, J. A. Morman, J. Reifman, T. Y. C. Wei
14	Thermal Imaging Measurements of Lateral Diffusivity and Non-Invasive Material Defect Detection	6,517,238	2/11/2003	J. G. Sun and C. M. Deemer
13	Method and Apparatus for Automated Thermal Imaging of Combustor Liners and Other Products	6,517,236	2/11/2003	J. G. Sun, W. A. Ellingson, C. M. Deemer
12	Fanmod: A Simple Model Simulating a Fan as a Source of Axial and Circumferential Body Forces	#TXu-1-083	12/11/2002	C. Tzanos and T. H. Chien
11	Coated semiconductor devices for neutron detection (as issued)	6,479,826	11/12/2002	R. T. Klann, D. S. McGregor
10	Methods and Apparatus for Producing Phase Change Ice Particulate Saline Slurries	6,413,444	7/2/2002	K. E. Kasza
9	Method and apparatus for the clean replacement of contaminated hepa filters	6,364,923	4/2/2002	A. R. Frigo, D. E. Preuss, R. F. Malecha, S. G. Weidmeyer, E. F. Bielick

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8	Statistically Qualified Neuro-Analytic Failure Detection Methods and System	6,353,815	03/05/2002	R.B. Vilim, H.E. Garcia, F.W. Chen
7	Methods for weld monitoring and laser heat treatment monitoring (as issued)	6,329,635	12/11/2001	P. G. Sanders, K. H. Leong
6	Optical Method and Apparatus for Detection of Defects and Microstructural Changes in Ceramics and Ceramic Coatings	6,285,449	9/4/2001	W. A. Ellingson, J. A. Todd, J. G. Sun
5	Ultrasonic Gas Analyzer and Method to Analyze Trace Gases	6,279,378	9/4/2001	S. H. Sheen, H. T. Chien, A. C. Raptis
4	Method and Apparatus for Producing Phase Change Ice Particulate Perfluorocarbon Slurries	6,244,052	6/12/2001	K. E. Kasza
3	Method for Fabricating 99Mo Production Targets Using Low Enriched Uranium, 99Mo Production Targets Comprising Low Enriched Uranium	6,160,862	12/31/2000	T. Wiencek, J. E. Matos, G. L. Hofman
2	System for Monitoring an Industrial or Biological Process	5,774,379	30/06/1998	K.C. Gross, S.W. Wegerich, R.B. Vilim, A.M. White
1	Neural Network Based System for Equipment Surveillance	5,745,382	04/28/1998	R.B. Vilim, K.C. Gross, S.W. Wegerich

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