Jay S Pearlman, CV

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Professional Preparation:

California Institute of Technology (Caltech)	Engineering (with honors)	BS 1966
University of Colorado	Aerospace	MS 1967
University of Washington	Aeronautics	PhD 1974

Appointments:

Co-Owner	J&F Enterprise	2000-Present
Director	FourBridges	2017-Present
Professor, Adjunct	University of Colorado, Boulder CO	2012-2018
Chair, Past Chair	IEEE Committee on Earth Observation	2004-2012
Chief Scientist/Fellow	Boeing Network Centric Operations	2002-2008
Senior Scientist	TRW Advanced Systems,	1985-2002
R&D manager	Maxwell Laboratories	1979-1985
Program Manager	US Department of Energy	1977-1979
Scientist	Sandia National Laboratories	1974-1977

Positions and Programs

Ocean Best Practices (OBP). (2015-present)

The OBP Working group creating the OBP system is an international team with members and support from GOOS, IODE, JCOMM, AWI, GEOMAR, SOCIB, IEEE and US IOOS. It is creating a sustainable capability based on the IODE OBP Repository with the addition of state of the art semantics and natural language processing for improved BP discoverability and access. Dr. Pearlman is leading the team, which is funded by ODIP (H2020 project), AtlantOS (H2020 project) and the Oceanus Research Coordination Network (NSF project). Implementation of a pilot is scheduled for April 2018.

AtlantOS H2020 Project (2015-present)

AtlantOS is focused on Atlantic Ocean observations and information applications. Dr. Pearlman is co-lead of the innovation work package and is leading the task on Ocean Best practices. Through the project he is working with the Data Management work package on bet practices for data and information management. More information is available at https://www.atlantos-h2020.eu/project-information/best-practices/.

Ocean Data Interoperability Platform (ODIP) (2015-2018)

ODIP is an ocean information interoperability H2020 project which has both demonstration prototypes and technology development. Dr. Pearlman participated in the project in three ways: supporting application of data and information brokering to oceans research; the development of an Ocean Best Practices System for sustainable archiving of observation and data management best practices; and further the sensor web enablement standards for ocean applications (see Oceans of Tomorrow description in this CV).

Ocean Observations Research Coordination Network (OceanObs RCN) (2012-present)

The RCN is facilitating interoperability across ocean disciplines in the areas of data management, sensors and platforms. This includes publications on open data and multidisciplinary collaborations. This international for a has also been a networking opportunity for the ocean community including the academic, research and private sector participants in ocean R&D.

Oceans of Tomorrow (and NeXOS) Projects (2014-2017)

The Oceans of Tomorrow FP7 projects were an European Initiative to create a next generation of in situ ocean sensors for physical, biogeochemical and biological observations. Dr. Pearlman coordinated some of the actions across the OoT projects relating to interoperability and, in particular, led the OoT data working group on Sensor Web Enablement (SWE) OGC standards. ac The SWE standard defines a new approach to data and information interoperability for information That work is continuing under other European Projects. For NeXOS, Dr. Pearlman was a work package lead and was engaged in development and field testing of the new sensors.

EarthCube (US NSF) (2012-2017)

Co-PI for the Earthcube Brokering (B3) project (2013-2016), an NSF funded activity aimed at facilitating scientific data discovery and access, particularly in a cross-domain interoperable environment. The project included broker demonstrations for ocean applications.

Co-PI for EarthCube Broker Concept project (2012-2013), defining a development program for implementation of advanced interoperability for Brokering data and information, particularly across disciplines.

EarthCube activities: Co-chair of Technology and Architecture Committee (TAC) (2013 – 2017), Guided the design of the EarthCube information architecture; organized an international workshop on architecture state of the art and implementation for the geosciences (including oceans); Within TAC, participated in architecture working group, user requirements working group and gap analyses working group; Through TAC, addressed the integration of information system components to support science needs.

Open Geospatial Consortium (Standards)

OGC Global Advisory Council, Member (2008-present)

The OGC Board of Directors created the Global Advisory Council ("the Council") as a committee of the board to function as a non-executive, "blue-ribbon" panel positioned to advise OGC concerning its global outreach and organizational strategies.

Group on Earth Observation (GEO) (2004 – present)

IEEE Principal delegate to international Group on Earth Observation (2004-2009)

GEO Architecture and Data Committee, Co-chair (2005-2011)

The Architecture and Data Committee (ADC) designed and implemented the Global Earth Observation System of Systems to provide broad access to environmental information. As co-chair of ADC, Dr. Pearlman was one of the system architects and worked with various teams to build an advanced information system. He worked with CNR implementing a broker capability into GEOSS in 2010. He also participated in the User Interface Committee (requirements) and the Capacity Building Committee (training).

EuroGEOSS FP7 Project (2009-2012)

EuroGEOSS was an R&D project to develop a brokering capability to support information discovery and access within and across disciplines. Dr. Pearlman was a work package lead and supported the technology design and implementation. The project foundation was the earlier work on brokering in the GEO architecture and data implementation. Follow-on was in the EarthCube project and the implementation of Brokering in GEOSS and ODIP.

US Integrated Ocean Observation System (Northwest Region - NANOOS) (2004-2007)

NANOOS provides ocean applications and services to the US northwest coastal region as well as supports research and development in ocean observations. Dr. Pearlman led the development of the NANOOS data and information system for user access and outreach. He was also on the board of directors. (for more information see http://www.nanoos.org.)

Other Activities

Dr. Pearlman was a member of the UNESCO GOOS Science Steering Committee, a member of IOC JCOMM panel on Industry and a member for 6six years of the US national committee of the Scientific Committee on Ocean Research (SCOR). Dr. Pearlman was also on the National Academies Ocean Studies Board and a member of the Board on International Science Organizations.

GEOValue (2011-present)

GEOValue is an international community with focus on the value and socioeconomic impacts of geospatial information for decision-making. Dr. Pearlman has been co-lead of the community activities bringing together natural, economic and social scientists in a multi-disciplinary effort to better understand the value of information on decisions. This work has included a series of international workshops held in Europe and the US. For additional information see: http://www.geovalue.org.

Global Humanitarian Projects (IEEE) (2010-2016)

Dr. Pearlman was on the IEEE funding committee for award of humanitarian projects in developed and developing countries, primarily for implementation of technologies of social impact. This included project selection and monitoring as well as helping with the organization of Global Humanitarian Technology workshops.

Chief Engineer of Network Centric Operations Capabilities at Boeing and a Boeing Technical Fellow. (2002–2008)

In this role, Dr. Pearlman guided the development of internal programs in advanced information systems and large-scale networks. These addressed the need for information access, secure networks, and systems implementations. At Boeing, Jay also served as Chief Scientist on the Boeing Landsat Data Continuity Mission.

Others

- Chair, IEEE Oceanic Engineering Society Ocean Observing Technology Committee 2005 – 2019
- NSF Cyber-infrastructure Board 2006- 2007
- National Academy of Science Panel on NASA advanced technologies 2002-2003
- IEEE Distinguished Speaker 2002-2008
- National Academy of Science Steering Committee on Space Applications and Commercialization 1999-2002
- Deputy Lead for First Laser Fusion Technical Exchange between the US and the Soviet Union 1977
- Tau Beta Pi Engineering Honor Society

- IEEE Administrative Committee for Plasma Physics of Nuclear and Plasma Society 1982-1985

Journals
Associate Editor, Frontiers in Marine Science, Best Practices in Ocean Observing 2017 - present
Editorial Board – IEEE Systems Engineering Journal 2006 - 2009
Associate Editor, GRSS TGARS Journal 2002-2004
Editor, Special Issue TGARS, 2003

Awards:
- IEEE Fellow 2007
- IEEE Special Recognition Award 2006
- Boeing Achievement Award 2006
- Boeing Technical Fellow 2004
- Boeing Achievement award 2004
- Boeing Achievement award 2003
- Six Sigma Performance Award, 2002
- TRW Certificate of Achievement, 1998
- Pacific Bell Education Award 1997
- TRW Chairman's Award for Innovation, 1994
- TRW Chairman's Award for Innovation, 2001
- NASA Group Achievement Award 2001
- Special Recognition, Hyperion 2000
- Tau Beta Pi Engineering Honor Society

Publications and Reports for Jay Pearlman

1. Hermes, J., J. Pearlman, and P. L. Buttigieg (2018), What's the best way to responsibly collect ocean data?, *Eos, 99*, https://doi.org/10.1029/2018EO096533. Published on 04 May 2018

2. Bushnell, M., Buttigieg, P.L., Hermes, J., Heslop, E., Karstensen, J., Muller-Karger, F., ... , Pearlman, J, and Simpson, P. (2018). Sharing Best Practices Among Operators and Users of Oceanographic Data: Challenge, Status and Plans of the Ocean Best Practices Project, Marine Technology Society Journal, 52(3).

3. **Evolving and Sustaining Ocean Best Practices Workshop** - Simpson, P., Pearlman, F. and Pearlman J. (eds) (2017), 15 – 17 November 2017, Intergovernmental Oceanographic Commission, Paris, France: Proceedings. AtlantOS/ODIP/OORCN Ocean Best Practices Working Group, 74pp. DOI: http://dx.doi.org/10.25607/OBP-3

4. **Accessing Existing and Emerging Best Practices for Ocean Observation, a new approach for end-to-end management of best practices,** Jay Pearlman, Pier Luigi Buttigieg, Pauline Simpson, Cristian Muñoz, Emma Hesop, Juliet Hermes, Oceans 2017 – Anchorage, 2017 pp. 1-7

5. **NeXOS – Next Generation Cost-effective, Compact, Multifunctional Web Enabled Ocean Sensor Systems,** Simone Meme, Eric Delory, Matthieu Felgines, Jay Pearlman, et al., Oceans – Anchorage 2017, pp. 1-10.

6. **Bringing It Altogether – Toward A Sustainable Capability for Ocean Best Practices,** Jay Pearlman, Mark Bushnell, Pier Luigi Buttigieg, Juliet Hermes, Emma Heslop, Johannes Karstensen, Cristian Muñoz, Francoise Pearlman, Pauline Simpson, IEEE Oceanic Engineering Society Newsletter, March 2018.

7. **Validation and demonstration of novel oceanographic sensors on selected measurement platforms in the NeXOS project,** Lars G. Golmen; Francoise Pearlman; Karsten Kvalsund; Emanuele Reggiani; Nils-Roar Hareide; Svein Østerhus; Jay Pearlman; Eric Delory; Frederic Cyr; Simone Meme, Jun 2017OCEANS 2017 – Aberdeen

8. **NeXOS, developing and evaluating a new generation of in-situ ocean observation systems,** Jay Pearlman; Francoise Pearlman; Oliver Ferdinand; Oliver Zielinski; Eric Delory; Simone Meme; Nils Roar Hareide; Karsten Kvalsund; Joaquín del Río; Daniel Mihai Toma; Jean-Francois Rolin; Patrice Woerther; Lars Golmen; Emanuele Reggiani; Allison Haeffner; Christoph Waldmann, OCEANS 2017 - Aberdeen

9. **A new generation of optical systems for ocean monitoring,** Jay Pearlman and Oliver Zielinski, Sea Technology, February 2017

10. **Oceans of Tomorrow sensor interoperability for in-situ ocean monitoring,** Jay Pearlman; Simon Jirka; Joaquin del Rio; Eric Delory; Lennard Frommhold; Sergio Martinez; Tom O'Reilly, OCEANS 2016 MTS/IEEE Monterey 2016

11. **Ocean Data Interoperability Platform (ODIP): addressing key challenges for marine data management on a global scale,** Jay Pearlman; Dick Schaap; Helen Glaves, OCEANS 2016 MTS/IEEE Monterey 2016

12. **Applying OGC Sensor Web Enablement to Ocean Observing Systems,** Daniel Mihai TomaJoaquin del RioEnoc Martínez[...]C. Waldmann, Geospatial Sensor Webs Conference Aug 2016

13. **Facilitating open exchange of data and information,** James Gallagher, John Orcutt, Pauline Simpson, Dawn Wright, Jay Pearlman, Lisa Raymond, Earth Science Informatics 01/2015; DOI: 10.1007/s12145-014-0202-2 ·

14. **Integrated and More Sustainable Atlantic Ocean Observing (AtlantOS),** Martin Visbeck , Moacyr Araujo, Antje Boetius3, Erik Buch4, Herve Claustre, Tomasz Dabrowski, Eric Delory, Brad deYoung, Ken Drinkwater, Albert Fischer, Jan-Stefan Fritz, Kevin J. Horsburgh, Johannes Karstensen Richard Lampitt, Kate Larkin, Pierre-Yves, Le Traon, Pascale Lherminier, Pedro Monteiro, Matthew C. Mowlem, Jay Pearlman, Nadia Pinardi, Sylvie Pouliquen, Martin Saraceno, Sabrina Speich, Christoph Waldmann, Douglas Wallace, Bob Weller, Frederick Whoriskey, CLIVAR Exchanges No. 67, Vol 19, 2 Sep 2015.

15. **Sustainable Business Models for Brokering Middleware to support Research Interoperability: A Report from the Sustainable Business Models Team to the Brokering Governance Working Group of the Research Data Alliance (RDA)** Karl Benedict, Mairi Best, Sue Fyfe, Senay Habtezion, Clifford Jacobs, William Michener, Stefano Nativi, Jay Pearlman, Lindsay Powers, Andrew Turner, December 7, 2015

16. **Towards interoperable transatlantic environmental research infrastructure system: A CoopEUS Research Infrastructure Roadmap,** Henry W. Loescher, Sanna Sorvani, Ari Amsi[...]C. Waldmann, Aug 2015 Technical report

17. **NeXOS smart electronic interface for sensor interoperability,** Daniel M. Toma; Joaquín del Rio; Simon Jirka; Eric Delory; Jay Pearlman; Christoph Waldmann, OCEANS 2015 – Genova

18. **A research coordination network for ocean observations,** Jay Pearlman; Albert Wiliams; Samantha Simmons; Francisco Chavez; Bob Housman, OCEANS 2015 - Genova

19. **Requirements and approaches for a more cost-efficient assessment of ocean waters and ecosystems, and fisheries management,** J. Pearlman, R. Garello, E. Delory, A. Castro, J. Del Rio, D. M. Toma, J. F. Rolin, C. Waldmann, O. Zielinski, Oceans - St. John's, 2014; 01/2014

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21. **NeXOS development plans in ocean optics, acoustics and observing systems interoperability,** E. Delory, A. Castro, C. Waldmann, J. F. Rolin, P. Woerther, J. Gille, J. Del Rio, O. Zielinski, L. Golmen, N. R. Hareide, J. Pearlman, Sensor Systems for a Changing Ocean (SSCO), 2014 IEEE; 01/2014

22. **Objectives of the NeXOS project in developing next generation ocean sensor systems for a more cost-efficient assessment of ocean waters and ecosystems, and fisheries management,** Eric Delory, Ayoze Castro, Christoph Waldman, Jean-François Rolin, Patrice Woerther, Johan Gille, Joaquín Del Rio, Oliver Zielinski, Lars Golmen, Niels Roar Hareide, Jay Pearlman, René Garello, IEEE Oceans, Taipei; 01/2014

23. **Smart electronic interface for Web Enabled Ocean Sensor Systems,** D. M. Toma, J. Del Rio, S. Jirka, E. Delory, J. Pearlman, Sensor Systems for a Changing Ocean (SSCO), 2014 IEEE; 01/2014

24. **Informatics for multi-disciplinary ocean sciences,** Pearlman, Jay; Delory, Eric; Pissierssens, Peter; Raymond, Lisa; Simpson, Pauline; Waldmann, Christoph; Williams 3rd, Albert; EGU General Assembly 2014, 2014EGUGA..16.976

25. **BCube: Building a Geoscience Brokering Framework, =**Jodha Khalsa, Siri; Nativi, Stefano; Duerr, Ruth; Pearlman, Jay, EGU General Assembly 2014, 2014EGUGA..16.4392J

26. **Requirements and approaches for a more cost-efficient assessment of ocean waters and ecosystems, and fisheries management,** J. Pearlman, R. Garello, E. Delory, A. Castro, J. del Rio, D. Mihai, Toma, J. F. Rolin, C. Waldmann, O. Zielinski Oceans - St. John's, 2014; 01/2014

27. **Earth Science Infrastructures Interoperability: The Brokering Approach,** Stefano Nativi, Max Craglia, Jay Pearlman, IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing 06/2013; 6(3):1118-1129. DOI:10.1109/JSTARS.2013.2243113

28. **Report of the Research Coordination Network RCN:OceanObsNetwork Facilitating Open Exchange of Data and Information edited by Pearlman, Jay, Williams III, Albert and Simpson, Pauline,** Jay Pearlman, Albert Williams, Pauline Simpson, J Gallagher, J Orcutt, P Pissierssens, L Raymond, P Simpson, P Digiacomo, M Kampel, T Kawano, F Maltz, M Mccann, B Pirenne, I Shepherd, C Waldmann, May 2013 edited by Pearlman, Jay; Williams III, Albert; Simpson, Pauline, 05/2013;

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30. **Interoperability developments for next generation multifunctional ocean sensor systems in NeXOS,** Dan Toma, J. del Río, Antoni Manuel Lazaro, Manel Moreno, Arne Bröring, Jay Pearlman, E. Delory, 5th International Workshop on Marine Technology, Girona, Spain; 01/2013

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32. **A new perspective on long-term ocean observations,** Christoph Waldmann; Jay Pearlman; Robert Houtman; Albert Fischer, 2012 Oceans

33. **EarthCube Governance Framework: A Proposal to the Community,** Arctur David, Lee Allison, Tim Ahern, Jim Bowring, Gary Crane, Cecelia DeLuca, Geoffrey Fox, Carroll Hood, Hannes Leetaru, Kerstin Lehnert, Chris MacDermaid, Mohan Ramamurthy, Erin Robinson, Ilya Zaslavsky, Genevieve Pearthree, Kim Patten, George Percivall, Jay Pearlman, Joel Cutcher-Gershenfeld

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39. **Guest Editorial,** Shibasaki, Ryosuke; Pearlman, Jay, IEEE Systems Journal, vol. 2, issue 3, pp. 302-303, Publication Date: 09/2008; DOI: 10.1109/JSYST.2008.928859, Bibliographic Code: 2008ISysJ...2..302S

40. **Comsoc serving humanity - a global example - [the president's page],** Doug Zuckerman Jay Pearlman, IEEE Communications Magazine Published on 01 Jan 2008

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43. **Improving the analysis of Hyperion red-edge index from an agricultural area,** Jupp, David L. B.; Datt, Bisun; McVicar, Tim R.; Van Niel, Tom G.; Pearlman, Jay S.; Lovell, Jenny L.; King, Edward A. Proceedings of the SPIE, Volume 4898, p. 78-92 (2003); DOI: 10.1117/12.472696, Bibliographic Code: 2003SPIE.4898...78J

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Remote Sensing Symposium, 2003. Proceedings. Volume: 1, DOI: 10.1109/IGARSS.2003.1293751, Publication Year: 2003, Page(s): 284 – 287.

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46. **Processing hyperion and ali for forest classification,** Goodenough, D. G.; Dyk, A.; Niemann, K. O.; Pearlman, J. S.; Chen, Hao; Han, Tian; Murdoch, M.; West, C., IEEE Transactions on Geoscience and Remote Sensing, vol. 41, issue 6, pp. 1321-1331, Publication Date: 06/2003, DOI:10.1109/TGRS.2003.813214, Bibliographic Code: 2003ITGRS..41.1321G

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48. **Preprocessing Eo-1 Hyperion hyperspectral data to support the application of agricultural indexes,** Datt, B.; McVicar, T. R.; van Niel, T. G.; Jupp, D. L. B.; Pearlman, J. S., IEEE Transactions on Geoscience and Remote Sensing, vol. 41, issue 6, pp. 1246-1259; Publication Date: 06/2003, DOI:10.1109/TGRS.2003.813206; Bibliographic Code: 2003ITGRS..41.1246D

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51. **Foreword to the earth observing 1 special issue,** Pearlman, J. S.; Crawford, M.; Jupp, D. L. B.; Ungar, S., IEEE Transactions on Geoscience and Remote Sensing, vol. 41, issue 6, pp. 1147-1148, Publication Date: 06/2003, DOI: 10.1109/TGRS.2003.815898, Bibliographic Code: 2003ITGRS..41.1147P

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53. **Estimation and validation of land surface broadband albedos and leaf area index from EO-1 ALI data,** Shunlin Liang ; Hongliang Fang ; Kaul, M. ; Van Niel, T.G. ; McVicar, T.R. ; Pearlman, J.S. ; Walthall, C. ; Daughtry, C.S.T. ; Huemmrich, K.F. Geoscience and Remote Sensing, IEEE Transactions on Volume: 41 , Issue: 6 , Part: 1, DOI: 10.1109/TGRS.2003.813203, Publication Year: 2003, Page(s): 1260 – 1267

54. **Hyperion, a space-based imaging spectrometer,** Pearlman, J.S.; Barry, P.S.; Segal, C.C. ; Shepanski, J.; Beiso, D.; Carman, S.L. , Geoscience and Remote Sensing, IEEE Transactions on, Volume: 41, Issue: 6 , Part: 1, DOI: 10.1109/TGRS.2003.815018, Publication Year: 2003 , Page(s): 1160 – 1173,

55. **EO-1 Hyperion hyperspectral aggregation and comparison with EO-1 Advanced Land Imager and Landsat 7 ETM+,** Barry, P.S.; Mendenhall, J.; Jarecke, P.; Folkman, M.; Pearlman, J.; Markham, B.

Geoscience and Remote Sensing Symposium, 2002. IGARSS '02. 2002 IEEE International Volume: 3, DOI: 10.1109/IGARSS.2002.1026209, Publication Year: 2002, Page(s): 1648 - 1651 vol.3.

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Patents by Inventor Jay S. Pearlman

1. Airborne weather profiler network Brian J. Tillotson et al

Patent summary

Abstract

Apparatus and methods for remotely sensing meteorological conditions and for building models from the sensed conditions. More particularly, networks and systems are provided for gathering remotely sensed profiles of the meteorological conditions and for building the meteorological model. The networks and systems can also predict the weather. Also various remote profilers are provided including LIDAR, RADAR, nano-sondes, microwave, and even GPS (Global Positioning System) related instruments.

Patent number: 7365674

Filing date: Sep 26, 2005

Issue date: Apr 29, 2008

Inventors: Brian J. Tillotson, Jay S. Pearlman, David A. Whelan

Assignee: The Boeing Company

2. Measuring wind vectors remotely using airborne radar Jay S. Pearlman et al

Patent summary

Abstract

Airborne meteorological radars and related networks and models. In one embodiment a network for creating a meteorological model includes a mobile sensing node and a modeling node. The sensing node includes a meteorological RADAR that senses the wind velocity. Data from the meteorological RADAR regarding the wind velocity is received by a processor of the modeling node, which determines a model of the wind from the wind velocity. The modeling node combines data from a second sampling node with the data from the first sampling node to create a resultant wind velocity vector. Preferably, the modeling node and the sampling node(s) communicate over an airborne WAN. Another embodiment provides a method of measuring the wind velocity. The method includes steering a RADAR signal out of the plane of travel of the mobile platform. The wind velocity is measured using a return of the RADAR signal.

Patent number: 7365675
Filing date: Sep 26, 2005
Issue date: Apr 29, 2008
Inventors: Jay S. Pearlman, Brian J. Tillotson
Assignee: The Boeing Company

3. Focal plane imaging array with internal calibration source Paul S. C. Lee et al

Patent summary

Abstract

A focal plane imaging array (FPIA) (16) for use in a direct detection imaging device (10) for conducting radiometric imaging at microwave and millimeter-wave frequencies is disclosed as having an internal electronic calibration source (36). The plurality of energy detecting pixel elements (14) which comprise the FPIA (16) include a detection circuit (34) and a calibration circuit (36). The calibration circuit (36) is uni-directionally coupled to the detection circuit (34) to allow a known calibration signal "pulse" to be introduced into the detection circuit (34). The calibration pulse is processed by the pixel detection circuit and the output signal is compared with the pixel's responsivity value. Adjustments in the pixel gain and sensitivity may then be made as appropriate.

Patent number: 5438336
Filing date: Nov 12, 1993
Issue date: Aug 1, 1995
Inventors: Paul S. C. Lee, Pei-Ming D. Chow, John J. Berenz, Jay S. Pearlman, Wayne W. Lam
Assignee: TRW Inc.

Current U.S. Classification
342/174; 342/53

International Classification
G01S 740

4. Microwave aircraft landing system using narrow bandwidth filtering Paul S. C. Lee et al

Patent summary

Abstract

A microwave locating system is provided for locating known features and distinguishing between different types of features. The locating system includes a plurality of modulated microwave power sources located on known features and radiating modulated microwave signals having modulated frequencies selected in accordance with the known features. A video detection sensor camera is located remote from the sources for sensing microwave signals within a field of view and providing location signals for each of the sources. The camera includes an array of receiver elements which provide narrow bandwidth filtering so as to identify received signals as one of a plurality of selected modulated frequencies. The locating system further provides an image of the location signals which distinguishes between different selected located features.

Patent number: 5351077
Filing date: Oct 19, 1992
Issue date: Sep 27, 1994
Inventors: Paul S. C. Lee, Jay S. Pearlman
Assignee: TRW Inc.
Primary Examiner: Bryan S. Tung

Current U.S. Classification
348/117; 348/116; 348/163; 340/947; 342/35

International Classification
H04N 718; G01S 116

5. High pulsed voltage system for extending the shelf life of pumpable food products Andrew H Bushnell et al

Patent summary

Abstract

The present invention is directed to methods and apparatus for preserving fluid foodstuff and more particularly, is directed to such methods and apparatus for extending the shelf life of perishable fluid foodstuffs such as diary products, fruit juices and liquid egg products, which are growth media for microorganisms. The present invention is also directed to preserved liquid foodstuff which have extended shelf life.

Patent number: 5235905

Filing date: June 5, 1992

Issue date: August 17, 1993

Inventors: Andrew H. Bushnell,Joseph E. Dunn, Wayne Clark,Jay S. Pearlman

Assignee: Foodco Corporation

6. Methods for preservation of foodstuffs Joseph E. Dunn et al

Patent summary

Abstract
Methods for food product preservation by inactivation of microorganisms and/or enzymes by applying pulses of very intense, very short duration pulses of light in the visible and near visible frequencies to the surface of food products to be preserved. Also disclosed are packaging methods and apparatus utilizing such intense, short pulses of polychromatic, incoherent light.

Patent number: 5034235
Filing date: Jun 8, 1989
Issue date: Jul 23, 1991
Inventors: Joseph E. Dunn, R. Wayne Clark, John F. Asmus, Jay S. Pearlman, Keith Boyer, Francois Painchaud, Gunter A. Hofmann
Assignee: Maxwell Laboratories, Inc.

Current U.S. Classification
426/238; 426/248; 426/399; 426/410; 426/413; 426/521; 426/407; 422/24

International Classification
A23L 300; A23L 328; A16L 200

7. Methods for aseptic packaging of medical devices Joseph E. Dunn et al

Patent summary

Abstract
Methods and apparatus for food product preservation by inactivation of microorganisms and/or enzymes by applying pulses of very intense, very short duration pulses of light in the visible and near visible frequencies to the surface of food products to be preserved. Also disclosed are packaging methods and apparatus utilizing such intense, short pulses of polychromatic, incoherent light.

Patent number: 4910942
Filing date: Aug 11, 1989
Issue date: Mar 27, 1990
Inventors: Joseph E. Dunn, R. Wayne Clark, John F. Asmus, Jay S. Pearlman, Keith Boyer, Fraincois Painchaud, Gunter A. Hofmann
Assignee: Maxwell Laboratories, Inc.

Current U.S. Classification
53425; 53426

International Classification
B65B 5508; B65B 5516

8. Methods for preservation of foodstuffs Joseph E. Dunn et al

Patent summary

Abstract
Methods and apparatus for food product preservation by inactivation of microorganisms and/or enzymes by applying pulses of very intense, very short duration pulses of light in the visible and near visible frequencies to the surface of food products to be preserved. Also disclosed are packaging methods and apparatus utilizing such intense, short pulses of polychromatic, incoherent light.

Patent number: 4871559
Filing date: Apr 28, 1988
Issue date: Oct 3, 1989
Inventors: Joseph E. Dunn, R. Wayne Clark, John F. Asmus, Jay S. Pearlman, Keith Boyer, Fraincois Painchaud, Gunter A. Hofmann
Assignee: Maxwell Laboratories, Inc.

Current U.S. Classification
426/248; 426/407; 426/410; 426/521; 422/24

International Classification
A23L 300; A23L 328; A61L 200

9. Apparatus for extending the shelf life of fluid food products Joseph E. Dunn et al

Patent summary

Abstract
Methods and apparatus for preserving fluid food products by subjecting the fluid foodstuffs such as diary products, fruit juices and fluid egg products to controlled, pulsed, high voltage electric field treatment. The methods and apparatus further contemplate the utilization of treatment for storage temperature control in the preservation of perishable fluid foodstuffs.

Patent number: 4838154
Filing date: May 18, 1987
Issue date: Jun 13, 1989
Inventors: Joseph E. Dunn, Jay S. Pearlman
Assignee: Maxwell Laboratories, Inc.

Current U.S. Classification
99451; 99483

International Classification
A23L 332

10. Filter apparatus for use with an x-ray source John C. Riordan et al

Patent summary

Abstract

Filter apparatus for use in x-ray equipment including a repetitively pulsed x-ray source, a window for transmitting x-rays generated by the source to an object to be irradiated, and a vacuum chamber containing the x-ray source and the filter apparatus. The filter apparatus includes a baffle for diffusing hot gases and directing them away from the window. The filter apparatus further includes an ultraviolet light absorber which overlies the window with respect to the x-ray source whereby undesirable components generated with the x-rays by the x-ray source are substantially eliminated prior to reaching the window. Also disclosed is a method of eliminating undersirable by-products of x-ray generation.

Patent number: 4837794
Filing date: Oct 12, 1984
Issue date: Jun 6, 1989
Inventors: John C. Riordan, Jay S. Pearlman
Assignee: Maxwell Laboratories Inc.

Current U.S. Classification
378/119; 378/34; 378/122

International Classification
G01N 2320

11. Methods and apparatus for extending the shelf life of fluid food products Joseph E. Dunn et al

Patent summary

Abstract
Methods and apparatus for preserving fluid food products by subjecting the fluid foodstuffs such as dairy products, fruit juices and fluid egg products to controlled, pulsed, high voltage electric field treatment. The methods and apparatus further contemplate the utilization of treatment for storage temperature control in the preservation of perishable fluid foodstuffs.

Patent number: 4695472
Filing date: May 31, 1985
Issue date: Sep 22, 1987
Inventors: Joseph E. Dunn, Jay S. Pearlman
Assignee: Maxwell Laboratories, Inc.

Current U.S. Classification
426/237; 426/238; 426/521; 99451

International Classification
A23L 332

12. System for generating soft X rays Jay S. Pearlman et al

Patent summary

Abstract
A system for generating soft X rays. This system includes valve apparatus for repetitively providing bursts of a gas of brief duration and a magnetic pulse compression power supply for providing high current pulses. The system further includes a transmission line connected to the power supply for transmitting power pulses from the supply to discharge through bursts of gas. The power supply includes a plurality of series saturable inductor magnetic switches and a plurality of shunt capacitors. Thus, upon synchronized provision of a burst of gas from the valve apparatus and a power pulse from the power supply, a high current discharge generates plasma and an intense magnetic field which radially compresses the plasma, resulting in a dense, high temperature plasma which is an intense source of soft X rays.

Patent number: 4589123
Filing date: Feb 27, 1985
Issue date: May 13, 1986
Inventors: Jay S. Pearlman, John C. Riordan, Vance I. Valencia
Assignee: Maxwell Laboratories, Inc.
Primary Examiner: T. N. Grigsby

Current U.S. Classification
378/106; 31511171; 376/143; 376/144; 378/34; 378/119

International Classification
H05G 122; H01J 724; G21B 100; G21K 500

13. Transmission line transmitting energy to load in vacuum chamber Jay S. Pearlman et al

Patent summary

Abstract

A transmission line connecting a power supply, for supplying power pulses, to a load disposed inside of a vacuum chamber. Electrically conductive debris in both gaseous and non-gaseous forms is generated in response to the application of the power pulse to the load. The transmission line includes first and second conductors electrically connecting the power supply to the load. An insulator extends between the conductors and partially defines the vacuum chamber. A dump for debris in non-gaseous form is disposed between load and the insulator and the transmission line further includes a system for ejecting gaseous debris from between the conductors so that substantial debris is prevented from accumulating on the insulator, which accumulation, if allowed to form, could result in flashover of the transmission line.

Patent number: 4578805
Filing date: Oct 10, 1984
Issue date: Mar 25, 1986
Inventors: Jay S. Pearlman, John P. Shannon
Assignee: Maxwell Laboratories, Inc.
Primary Examiner: T. N. Grigsby

Current U.S. Classification
378/119; 31511121; 376/144

International Classification
H01J 724