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PATENTS ADDENDUM

David Sherrer has filed for patents to protect the following inventions. This listing includes patent applications that are pending as well as patents that have already been granted by the United States Patent and Trademark Office (USPTO).

SUBSTRATE-FREE INTERCONNECTED ELECTRONIC MECHANICAL STRUCTURAL SYSTEMS
Publication number: 20180153055
Abstract: Substrate-free mechanical structural systems comprised of interconnected subsystems of electronic and/or electromechanical components.
Type: Application
Filed: December 27, 2017
Publication date: May 31, 2018
Inventors: Ian Hovey, J. Robert Reid, David Sherrer, Will Stacy, Ken Vanhille

STRUCTURES AND METHODS FOR INTERCONNECTS AND ASSOCIATED ALIGNMENT AND ASSEMBLY MECHANISMS FOR AND BETWEEN CHIPS, COMPONENTS, AND 3D SYSTEMS
Publication number: 20180123217
Abstract: Structures and methods for interconnects and associated alignment and assembly mechanisms for and between chips, components, and 3D systems.
Type: Application
Filed: January 3, 2018
Publication date: May 3, 2018
Inventors: Jean-Marc Rollin, J. Robert Reid, David Sherrer, Will Stacy, Ken Vanhille, J. Marcus Oliver, Tim Smith

THREE-DIMENSIONAL MICROSTRUCTURES
Publication number: 20180069287
Abstract: An apparatus comprising a first power combiner/divider network and a second power combiner/divider network. The first power combiner/divider network splits a first electromagnetic signal into split signals that are connectable to signal processor(s). The second power combiner/divider network combines processed signals into a second electromagnetic signal. The apparatus includes a three-dimensional coaxial microstructure.
Type: Application
Filed: November 10, 2017
Publication date: March 8, 2018
Inventors: David Sherrer, Jean-Marc Rollin, Kenneth Vanhille, Marcus Oliver, Steven E. Huettner

Substrate-free interconnected electronic mechanical structural systems
Patent number: 9888600
Abstract: Substrate-free mechanical structural systems comprised of interconnected subsystems of electronic and/or electromechanical components are provided.
Type: Grant
Filed: March 14, 2016
Date of Patent: February 6, 2018
Assignee: NUVOTRONICS, INC
Inventors: Ian Hovey, J. Robert Reid, David Sherrer, Will Stacy, Ken Vanhille

Three-dimensional microstructures
Patent number: 9843084
Abstract: An apparatus comprising a first power combiner/divider network and a second power combiner/divider network. The first power combiner/divider network splits a first electromagnetic signal into split signals that are connectable to signal processor(s). The second power combiner/divider network combines processed signals into a second electromagnetic signal. The apparatus includes a three-dimensional coaxial microstructure.
Type: Grant
Filed: July 28, 2016
Date of Patent: December 12, 2017
Assignee: NUVOTRONICS, INC
Inventors: David Sherrer, Jean-Marc Rollin, Kenneth Vanhille, Marcus Oliver, Steven E. Huettner

MULTILAYER BUILD PROCESSES AND DEVICES THEREOF
Publication number: 20170338036
Abstract: A process to form devices may include forming a seed layer on and/or over a substrate, modifying a seed layer selectively, forming an image-wise mold layer on and/or over a substrate and/or electrodepositing a first material on and/or over an exposed conductive area. A process may include selectively applying a temporary patterned passivation layer on a conductive substrate, selectively forming an image-wise mold layer on and/or over a substrate, forming a first material on and/or over at least one of the exposed conductive areas and/or removing a temporary patterned passivation layer. A process may include forming a sacrificial image-wise mold layer on a substrate layer, selectively placing one or more first materials in one or more exposed portions of a substrate layer, forming one or more second materials on and/or over a substrate layer and/or removing a portion of a sacrificial image-wise mold layer.
Type: Application
Filed: March 17, 2017
Publication date: November 23, 2017
Inventor: David Sherrer

COAXIAL TRANSMISSION LINE MICROSTRUCTURES AND METHODS OF FORMATION THEREOF
Publication number: 20170200999
Abstract: Provided are coaxial transmission line microstructures formed by a sequential build process, and methods of forming such microstructures. The microstructures include a transition structure for transitioning between the coaxial transmission line and an electrical connector. The microstructures have particular applicability to devices for transmitting electromagnetic energy and other electronic signals.
Type: Application
Filed: January 13, 2017
Publication date: July 13, 2017
Inventor: David Sherrer

Transition structure between a rectangular coaxial microstructure and a cylindrical coaxial cable using step changes in center conductors thereof
Patent number: 9570789
Abstract: Provided are coaxial transmission line microstructures formed by a sequential build process, and methods of forming such microstructures. The microstructures include a transition structure for transitioning between the coaxial transmission line and an electrical connector. The microstructures have particular applicability to devices for transmitting electromagnetic energy and other electronic signals.
Type: Grant
Filed: April 7, 2015
Date of Patent: February 14, 2017
Assignee: NUVOTRONICS, INC
Inventor: David Sherrer

THREE-DIMENSIONAL MICROSTRUCTURES
Publication number: 20160336639
Abstract: An apparatus comprising a first power combiner/divider network and a second power combiner/divider network. The first power combiner/divider network splits a first electromagnetic signal into split signals that are connectable to signal processor(s). The second power combiner/divider network combines processed signals into a second electromagnetic signal. The apparatus includes a three-dimensional coaxial microstructure.
Type: Application
Filed: July 28, 2016
Publication date: November 17, 2016
Inventors: David Sherrer, Jean-Marc Rollin, Kenneth Vanhille, Marcus Oliver, Steven E. Huettner

High frequency power combiner/divider
Patent number: 9490517
Abstract: Radio frequency (RF) power amplifiers are provided which may include high power, wideband, microwave or millimeter-wave solid state power amplifiers based on waveguide power combiner/dividers.
Type: Grant
Filed: June 17, 2015
Date of Patent: November 8, 2016
Assignee: Nuvotronics, Inc.
Inventors: Donald X. Wu, David Sherrer, Jean-Marc Rollin

STRUCTURES AND METHODS FOR INTERCONNECTS AND ASSOCIATED ALIGNMENT AND ASSEMBLY MECHANISMS FOR AND BETWEEN CHIPS, COMPONENTS, AND 3D SYSTEMS
Publication number: 20160294035
Abstract: Structures and methods for interconnects and associated alignment and assembly mechanisms for and between chips, components, and 3D systems.
Type: Application
Filed: March 18, 2016
Publication date: October 6, 2016
Inventors: Jean-Marc Rollin, J. Robert Reid, David Sherrer, Will Stacy, Ken Vanhille, J. Marcus Oliver, Tim Smith

Three-dimensional microstructures
Patent number: 9413052
Abstract: An apparatus comprising a first power combiner/divider network and a second power combiner/divider network. The first power combiner/divider network splits a first electromagnetic signal into split signals that are connectable to signal processor(s). The second power combiner/divider network combines processed signals into a second electromagnetic signal. The apparatus includes a three-dimensional coaxial microstructure.
Type: Grant
Filed: September 4, 2015
Date of Patent: August 9, 2016
Assignee: Nuvotronics, Inc.
Inventors: David Sherrer, Jean-Marc Rollin, Kenneth Vanhille, Marcus Oliver, Steven E. Huettner

MICROFLUIDIC CHANNELS FOR THERMAL MANAGEMENT OF MICROELECTRONICS
Publication number: 20160218048
Abstract: Heat spreading device using microfabricated microfluidic structures to cool microelectronic devices.
Type: Application
Filed: January 26, 2016
Publication date: July 28, 2016
Inventors: Hooman Kazemi, Mark Crawford, Aaron Caba, David Sherrer

MULTILAYER BUILD PROCESSES AND DEVICES THEREOF
Publication number: 20160217922
Abstract: A process to form devices may include forming a seed layer on and/or over a substrate, modifying a seed layer selectively, forming an image-wise mold layer on and/or over a substrate and/or electrodepositing a first material on and/or over an exposed conductive area. A process may include selectively applying a temporary patterned passivation layer on a conductive substrate, selectively forming an image-wise mold layer on and/or over a substrate, forming a first material on and/or over at least one of the exposed conductive areas and/or removing a temporary patterned passivation layer. A process may include forming a sacrificial image-wise mold layer on a substrate layer, selectively placing one or more first materials in one or more exposed portions of a substrate layer, forming one or more second materials on and/or over a substrate layer and/or removing a portion of a sacrificial image-wise mold layer.
Type: Application
Filed: January 22, 2016
Publication date: July 28, 2016
Inventor: David Sherrer

SUBSTRATE-FREE INTERCONNECTED ELECTRONIC MECHANICAL STRUCTURAL SYSTEMS
Publication number: 20160198584
Abstract: Substrate-free mechanical structural systems comprised of interconnected subsystems of electronic and/or electromechanical components are provided.
Type: Application
Filed: March 14, 2016
Publication date: July 7, 2016
Inventors: Ian Hovey, J. Robert Reid, David Sherrer, Will Stacy, Ken Vanhille

Microstructure including microstructural waveguide elements and/or IC chips that are mechanically interconnected to each other
Patent number: 9306255
Abstract: Structures and methods for interconnects and associated alignment and assembly mechanisms for and between chips, components, and 3D systems.
Type: Grant

Filed: March 14, 2014
Date of Patent: April 5, 2016
Assignee: NUVOTRONICS, INC.
Inventors: Jean-Marc Rollin, J. Robert Reid, David Sherrer, Will Stacy, Ken Vanhille, J. Marcus Oliver, Tim Smith

Substrate-free mechanical interconnection of electronic sub-systems using a spring configuration
Patent number: 9306254
Abstract: Substrate-free mechanical structural systems comprised of interconnected subsystems of electronic and/or electromechanical components are provided.
Type: Grant
Filed: March 14, 2014
Date of Patent: April 5, 2016
Assignee: NUVOTRONICS, INC.
Inventors: Ian Hovey, J. Robert Reid, David Sherrer, Will Stacy, Ken Vanhille

COAXIAL TRANSMISSION LINE MICROSTRUCTURES AND METHODS OF FORMATION THEREOF
Publication number: 20160072171
Abstract: Provided are coaxial transmission line microstructures formed by a sequential build process, and methods of forming such microstructures. The microstructures include a transition structure for transitioning between the coaxial transmission line and an electrical connector. The microstructures have particular applicability to devices for transmitting electromagnetic energy and other electronic signals.
Type: Application
Filed: April 7, 2015
Publication date: March 10, 2016
Applicant: NUVOTRONICS, LLC
Inventor: David Sherrer

HIGH FREQUENCY POWER COMBINER/DIVIDER
Publication number: 20160036113
Abstract: Radio frequency (RF) power amplifiers are provided which may include high power, wideband, microwave or millimeter-wave solid state power amplifiers based on waveguide power combiner/dividers.
Type: Application
Filed: June 17, 2015
Publication date: February 4, 2016
Inventors: Donald X. Wu, David Sherrer, Jean-Marc Rollin

THREE-DIMENSIONAL MICROSTRUCTURES
Publication number: 20150380795
Abstract: An apparatus comprising a first power combiner/divider network and a second power combiner/divider network. The first power combiner/divider network splits a first electromagnetic signal into split signals that are connectable to signal processor(s). The second power combiner/divider network combines processed signals into a second electromagnetic signal. The apparatus includes a three-dimensional coaxial microstructure.
Type: Application
Filed: September 4, 2015
Publication date: December 31, 2015
Inventors: David Sherrer, Jean-Marc Rollin, Kenneth Vanhille, Marcus Oliver, Steven E. Huettner

Three-dimensional microstructures
Patent number: 9136575
Abstract: An apparatus comprising a first power combiner/divider network and a second power combiner/divider network. The first power combiner/divider network splits a first electromagnetic signal into split signals that are connectable to signal processor(s). The second power combiner/divider network combines processed signals into a second electromagnetic signal. The apparatus includes a three-dimensional coaxial microstructure.
Type: Grant
Filed: April 15, 2014
Date of Patent: September 15, 2015
Assignee: NUVOTRONICS, LLC
Inventors: David Sherrer, Jean-Marc Rollin, Kenneth Vanhille, Marcus Oliver, Steven E. Huettner

Hollow core coaxial cables and methods of making the same
Patent number: 9088074
Abstract: Disclosed and claimed herein is a hollow core coaxial cable, having a dielectric capillary with an inside wall and an outside wall, an inner conductive layer on the inside wall of the hollow core coaxial cable and an outer conductive layer on the outside wall of the hollow core coaxial cable, the conductive layers may be patterned. Further disclosed is a method of making the hollow core coaxial cable. Further disclosed are holey fiber coaxial cables, having a holey fiber capillary having an inside wall and an outside wall, an inner conductive layer on the inside wall of the hollow core coaxial cable and an outer conductive layer on the outside wall of the hollow core coaxial cable, the conductive layers may be patterned.
Type: Grant
Filed: July 14, 2011
Date of Patent: July 21, 2015
Assignee: NUVOTRONICS, LLC
Inventors: Noel Heiks, David Sherrer

Coaxial transmission line microstructure with a portion of increased transverse dimension and method of formation thereof
Patent number: 9000863
Abstract: Provided are coaxial transmission line microstructures formed by a sequential build process, and methods of forming such microstructures. The microstructures include a transition structure for transitioning between the coaxial transmission line and an electrical connector. The microstructures have particular applicability to devices for transmitting electromagnetic energy and other electronic signals.
Type: Grant
Filed: September 17, 2013
Date of Patent: April 7, 2015
Assignee: Nuvotronics, LLC.
Inventor: David Sherrer

Waveguide balun having waveguide structures disposed over a ground plane and having probes located in channels
Patent number: 8917150
Abstract: An apparatus may include one or more conductive surfaces, waveguide structures and/or ports. One or more waveguide structures may include a portion disposed above a conductive surface, an outer conductor, and/or an inner conductor. A first portion of an outer conductor may be connected to a conductive surface. A port end of an outer conductor may be connected to an outer conductor port. An inner conductor may be disposed inside and spaced apart from an outer conductor. An inner conductor port may be connected to an inner conductor. An inner conductor of two or more waveguide structures may be connected to each other. A conductive surface may include at least one aperture portion, which may have a width substantially similar to the width of a waveguide structure. A substrate may be disposed between one or more waveguide structures and a conductive surface for a substantial portion of a waveguide structure.
Type: Grant
Filed: January 22, 2011
Date of Patent: December 23, 2014
Assignee: Nuvotronics, LLC
Inventors: Kenneth Vanhille, David Sherrer

System and method for extracting power from fluid using a Tesla-type bladeless turbine
Patent number: 8801359
Abstract: Smooth, preferably variable-sweep fluid collection device surfaces disposed into opposition with wind, river, surf, ocean or tidal currents generate enhanced velocity fluid flows at length driven into onboard work-extracting disc turbines at advantageous angles of attack. Keyed to shafts turning freely through optionally extendable volutes, disc turbines comprising a dense population of smooth, axially fixed or adjustably spaced discs conducting preferably laminar flow between adjacent elements develop significant torque through boundary layer adhesion and viscous shear-stress between fluid layers. Exhaust of disc turbine throughput into divergent channels drafting into external currents of initially higher than ambient velocity and lower pressure may reduce turbine discharge backpressure, rapidly clear system throughput, and allow normally disadvantageous drag to be utilized to develop greater work generation.
Type: Grant
Filed: May 5, 2008
Date of Patent: August 12, 2014
Inventor: Gordon David Sherrer

THREE-DIMENSIONAL MICROSTRUCTURES
Publication number: 20140218131
Abstract: An apparatus comprising a first power combiner/divider network and a second power combiner/divider network. The first power combiner/divider network splits a first electromagnetic signal into split signals that are connectable to signal processor(s). The second power combiner/divider network combines processed signals into a second electromagnetic signal. The apparatus includes a three-dimensional coaxial microstructure.
Type: Application
Filed: April 15, 2014
Publication date: August 7, 2014
Applicant: Nuvotronics, LLC
Inventors: David Sherrer, Jean-Marc Rollin, Kenneth Vanhille, Marcus Oliver, Steven E. Huettner

Thermal management
Patent number: 8717124
Abstract: A transmission line structure, a transmission line thermal manager and/or process thereof. A transmission line thermal manager may include a thermal member. A thermal member may be configured to form a thermal path, for example away from one or more inner conductors of a transmission line. A part of a thermal member may be formed of an electrically insulative and thermally conductive material. One or more inner conductors may be spaced apart from one or more outer conductors in a transmission line. A transmission line and/or a transmission line thermal manager may be configured to maximize a signal through a system, for example by modifying the geometry of one or more transmission line conductors and/or of a thermal manager.
Type: Grant
Filed: January 22, 2011
Date of Patent: May 6, 2014
Assignee: Nuvotronics, LLC
Inventors: Kenneth Vanhille, David Sherrer

Three-dimensional microstructures
Patent number: 8698577
Abstract: An apparatus comprising a first power combiner/divider network and a second power combiner/divider network. The first power combiner/divider network splits a first electromagnetic signal into split signals that are connectable to signal processor(s). The second power combiner/divider network combines processed signals into a second electromagnetic signal. The apparatus includes a three-dimensional coaxial microstructure.
Type: Grant
Filed: July 5, 2011
Date of Patent: April 15, 2014
Assignee: Nuvotronics, LLC
Inventors: David Sherrer, Jean-Marc Rollin, Kenneth Vanhille, Marcus Oliver, Steve Huettner

Three-dimensional matrix structure for defining a coaxial transmission line channel
Patent number: 8659371
Abstract: A system is provided for three dimensional coaxial transmission of signals in a micro-machined component, the system having, a micro-machined component matrix with a first metallic sheet having a plurality of first access holes disposed therein; a second metallic sheet having a plurality of second access holes disposed therein; a plurality of metal posts disposed between the first and second metallic sheets such that the metallic sheets are maintained at a desired distance; walls defining a coaxial transmission channel; and a coaxial transmission core disposed within the channel.
Type: Grant
Filed: February 26, 2010
Date of Patent: February 25, 2014
Assignees: BAE Systems Information and Electronic Systems Integration Inc., Nuvotronics, LLC
Inventors: Daniel L. Fonataine, David Sherrer

COAXIAL TRANSMISSION LINE MICROSTRUCTURES AND METHODS OF FORMATION THEREOF
Publication number: 20140015623
Abstract: Provided are coaxial transmission line microstructures formed by a sequential build process, and methods of forming such microstructures. The microstructures include a transition structure for transitioning between the coaxial transmission line and an electrical connector. The microstructures have particular applicability to devices for transmitting electromagnetic energy and other electronic signals.
Type: Application

Filed: September 17, 2013
Publication date: January 16, 2014
Applicant: NUVOTRONICS, LLC
Inventor: David Sherrer

MULTILAYER BUILD PROCESSES AND DEVICES THEREOF
Publication number: 20130333820
Abstract: A process to form devices may include forming a seed layer on and/or over a substrate, modifying a seed layer selectively, forming an image-wise mold layer on and/or over a substrate and/or electrodepositing a first material on and/or over an exposed conductive area. A process may include selectively applying a temporary patterned passivation layer on a conductive substrate, selectively forming an image-wise mold layer on and/or over a substrate, forming a first material on and/or over at least one of the exposed conductive areas and/or removing a temporary patterned passivation layer. A process may include forming a sacrificial image-wise mold layer on a substrate layer, selectively placing one or more first materials in one or more exposed portions of a substrate layer, forming one or more second materials on and/or over a substrate layer and/or removing a portion of a sacrificial image-wise mold layer.
Type: Application
Filed: August 13, 2013
Publication date: December 19, 2013
Applicant: NUVOTRONICS, LLC
Inventor: David Sherrer

Hollow Core Coaxial Cables and Methods of Making the Same
Publication number: 20130016022
Abstract: Disclosed and claimed herein is a hollow core coaxial cable, having a dielectric capillary with an inside wall and an outside wall, an inner conductive layer on the inside wall of the hollow core coaxial cable and an outer conductive layer on the outside wall of the hollow core coaxial cable, the conductive layers may be patterned. Further disclosed is a method of making the hollow core coaxial cable. Further disclosed are holey fiber coaxial cables, having a holey fiber capillary having an inside wall and an outside wall, an inner conductive layer on the inside wall of the hollow core coaxial cable and an outer conductive layer on the outside wall of the hollow core coaxial cable, the conductive layers may be patterned.
Type: Application
Filed: July 14, 2011
Publication date: January 17, 2013
Inventors: Noel Heiks, David Sherrer

THREE-DIMENSIONAL MICROSTRUCTURES
Publication number: 20120062335
Abstract: An apparatus comprising a first power combiner/divider network and a second power combiner/divider network. The first power combiner/divider network splits a first electromagnetic signal into split signals that are connectable to signal processor(s). The second power combiner/divider network combines processed signals into a second electromagnetic signal. The apparatus includes a three-dimensional coaxial microstructure.
Type: Application
Filed: July 5, 2011
Publication date: March 15, 2012
Inventors: David Sherrer, Jean-Marc Rollin, Kenneth Vanhille, Marcus Oliver, Steven Huetiner

Micro-optical device and method of making same
Patent number: 8050526
Abstract: A method for making a micro optical device includes providing an optical element, providing a glass perform, providing a substrate with a precision formed feature designed to passively position the optical element relative to the substrate, and bonding the optical element to the substrate using the glass perform. The optical element is passively located in a predefined relationship with the substrate, and the glass perform has a shape prior to contacting the substrate that is maintained before the bonding.
Type: Grant
Filed: January 19, 2006
Date of Patent: November 1, 2011
Assignee: Samsung Electronics Co., Ltd.
Inventors: Garo Khanarian, Margaret M. Pafford, David Sherrer

WAVEGUIDE STRUCTURES AND PROCESSES THEREOF
Publication number: 20110181376
Abstract: An apparatus may include one or more conductive surfaces, waveguide structures and/or ports. One or more waveguide structures may include a portion disposed above a conductive surface, an outer conductor, and/or an inner conductor. A first portion of an outer conductor may be connected to a conductive surface. A port end of an outer conductor may be connected to an outer conductor port. An inner conductor may be disposed inside and spaced apart from an outer conductor. An inner conductor port may be connected to an inner conductor. An inner conductor of two or more waveguide structures may be connected to each other. A conductive surface may include at least one aperture portion, which may have a width substantially similar to the width of a waveguide structure. A substrate may be disposed between one or more waveguide structures and a conductive surface for a substantial portion of a waveguide structure.
Type: Application
Filed: January 22, 2011
Publication date: July 28, 2011
Inventors: Kenneth Vanhille, David Sherrer

THERMAL MANAGEMENT
Publication number: 20110181377
Abstract: A transmission line structure, a transmission line thermal manager and/or process thereof. A transmission line thermal manager may include a thermal member. A thermal member may be configured to form a thermal path, for example away from one or more inner conductors of a transmission line. A part of a thermal member may be formed of an electrically insulative and thermally conductive material. One or more inner conductors may be spaced apart from one or more outer conductors in a transmission line. A transmission line and/or a transmission line thermal manager may be configured to maximize a signal through a system, for example by modifying the geometry of one or more transmission line conductors and/or of a thermal manager.
Type: Application
Filed: January 22, 2011
Publication date: July 28, 2011
Inventors: Kenneth Vanhille, David Sherrer

MULTILAYER BUILD PROCESSSES AND DEVICES THEREOF
Publication number: 20110123783
Abstract: A process to form devices may include forming a seed layer on and/or over a substrate, modifying a seed layer selectively, forming an image-wise mold layer on and/or over a substrate and/or electrodepositing a first material on and/or over an exposed conductive area. A process may include selectively applying a temporary patterned passivation layer on a conductive substrate, selectively forming an image-wise mold layer on and/or over a substrate, forming a first material on and/or over at least one of the exposed conductive areas and/or removing a temporary patterned passivation layer. A process may include forming a sacrificial image-wise mold layer on a substrate layer, selectively placing one or more first materials in one or more exposed portions of a substrate layer, forming one or more second materials on and/or over a substrate layer and/or removing a portion of a sacrificial image-wise mold layer.
Type: Application
Filed: November 23, 2010
Publication date: May 26, 2011
Inventor: David Sherrer

SYSTEM AND METHOD FOR EXTRACTING POWER FROM FLUID USING A TESLA-TYPE BLADELESS TURBINE
Publication number: 20100129193
Abstract: Smooth, preferably variable-sweep fluid collection device surfaces disposed into opposition with wind, river, surf, ocean or tidal currents generate enhanced velocity fluid flows at length driven into onboard work-extracting disc turbines at advantageous angles of attack. Keyed to shafts turning freely through optionally extendable volutes, disc turbines comprising a dense population of smooth, axially fixed or adjustably spaced discs conducting preferably laminar flow between adjacent elements develop significant torque through boundary layer adhesion and viscous shear-stress between fluid layers. Exhaust of disc turbine throughput into divergent channels drafting into external currents of initially higher than ambient velocity and lower pressure may reduce turbine discharge backpressure, rapidly clear system throughput, and allow normally disadvantageous drag to be utilized to develop greater work generation.
Type: Application
Filed: May 5, 2008
Publication date: May 27, 2010 **Inventor:** Gordon David Sherrer

Multi-level optical structure and method of manufacture
Publication number: 20080050582
Abstract: A multi-level optical device includes a substrate having a baseline level. At least one feature is disposed at a level above the baseline level. At least one feature is disposed at a level below the baseline level, or in the feature above the baseline level is located at a distance apart from the feature below the baseline level. The distance has an accuracy inn the range of approximately ±0.05 ?m to less than approximately ±1.0 ?m. A method of fabricating an optical device includes forming at least one feature at a level of above a baseline level of a substrate; and forming at least one feature at a baseline level below the baseline level of the substrate, wherein the feature at a level above the baseline level and the feature at a level below the baseline level are patterned in a single-mask step using a multi-level mask.
Type: Application
Filed: August 13, 2007
Publication date: February 28, 2008
Applicant: Shipley Company, L.L.C.
Inventors: Dan Steinberg, David Sherrer

Device package and methods for the fabrication and testing thereof
Publication number: 20070164419
Abstract: Provided are methods of forming sealed via structures. One method involves: (a) providing a semiconductor substrate having a first surface and a second surface opposite the first surface; (b) forming a layer on the first surface of the substrate; (c) etching a via hole through the substrate from the second surface to the layer, the via hole having a first perimeter at the first surface; (d) forming an aperture in the layer, wherein the aperture has a second perimeter within the first perimeter; and (e) providing a conductive structure for sealing the via structure. Also provided are sealed via structures, methods of detecting leakage in a sealed device package, sealed device packages, device packages having cooling structures, and methods of bonding a first component to a second component.
Type: Application
Filed: October 31, 2006
Publication date: July 19, 2007
Applicant: Rohm and Haas Electronic Materials LLC
Inventors: David Sherrer, Larry Rasnake, John Fisher

Coaxial waveguide microstructures having an active device and methods of formation thereof
Publication number: 20070152782
Abstract: Provided are coaxial waveguide microstructures. The microstructures include a substrate and a coaxial waveguide disposed above the substrate. The coaxial waveguide includes: a center conductor; an outer conductor including one or more walls, spaced apart from and disposed around the center conductor; one or more dielectric support members for supporting the center conductor in contact with the center conductor and enclosed within the outer conductor; and a core volume between the center conductor and the outer conductor, wherein the core volume is under vacuum or in a gas state. Also provided are methods of forming coaxial waveguide microstructures by a sequential build process and hermetic packages which include a coaxial waveguide microstructure.
Type: Application
Filed: December 12, 2006
Publication date: July 5, 2007
Applicant: Rohm and Haas Electronic Materials LLC
Inventors: David Sherrer, John Fisher

Micro-optical device
Publication number: 20070092178
Abstract: The present invention provides a micro-optical device which may be used as an optical pigtailing assembly for waveguides. In an exemplary configuration the assembly includes a first chip which includes an optoelectronic component and an optical fiber. The optical fiber and optoelectronic component are coupled with an optical component, such as one or more waveguides on an integrated optic chip.
Type: Application
Filed: October 11, 2006
Publication date: April 26, 2007
Applicant: Rohm and Haas Electronic Materials LLC
Inventors: Carl Gaebe, Noel Heiks, David Sherrer

Device package and methods for the fabrication and testing thereof
Publication number: 20070072321
Abstract: Provided are methods of forming sealed via structures. One method involves: (a) providing a semiconductor substrate having a first surface and a second surface opposite the first surface; (b) forming a layer on the first surface of the substrate; (c) etching a via hole through the substrate from the second surface to the layer, the via hole having a first perimeter at the first surface; (d) forming an aperture in the layer, wherein the aperture has a second perimeter within the first perimeter; and (e) providing a conductive structure for sealing the via structure. Also provided are sealed via structures, methods of detecting leakage in a sealed device package, sealed device packages, device packages having cooling structures, and methods of bonding a first component to a second component.
Type: Application
Filed: October 31, 2006
Publication date: March 29, 2007
Applicant: Rohm and Haas Electronic Materials LLC
Inventors: David Sherrer, Larry Rasnake, John Fisher

Device package and methods for the fabrication and testing thereof
Publication number: 20070040268
Abstract: Provided are methods of forming sealed via structures. One method involves: (a) providing a semiconductor substrate having a first surface and a second surface opposite the first surface; (b) forming a layer on the first surface of the substrate; (c) etching a via hole through the substrate from the second surface to the layer, the via hole having a first perimeter at the first surface; (d) forming an aperture in the layer, wherein the aperture has a second perimeter within the first perimeter; and (e) providing a conductive structure for sealing the via structure. Also provided are sealed via structures, methods of detecting leakage in a sealed device package, sealed device packages, device packages having cooling structures, and methods of bonding a first component to a second component.
Type: Application
Filed: October 31, 2006
Publication date: February 22, 2007
Applicant: Rohm and Haas Electronic Materials LLC
Inventors: David Sherrer, Larry Rasnake, John Fisher

Optical device package
Publication number: 20060284294
Abstract: An optical device package includes a substrate having an upper surface, a distal end, a proximal end, and distal and proximal longitudinally extending notches co-linearly aligned with each other. A structure is mounted to the substrate and has at least one recessed portion. The structure can be a lid or a frame to which a lid is bonded. An optical fiber is positioned within at least one of the proximal longitudinally extending notch and the distal longitudinally extending notch and within the recessed portion of the structure mounted to the substrate. The optical device package can also include conductive legs extending upwardly from bonding pads on the upper surface of the substrate to facilitate flip mounting of the optical device package onto a circuit board or other such platform.
Type: Application
Filed: August 11, 2006
Publication date: December 21, 2006
Applicants: Rohm and Haas Electronic Materials LLC
Inventors: David Sherrer, Mindaugas Dautartas, Neil Ricks, Dan Steinberg

Optoelectronic component
Publication number: 20060278821
Abstract: Provided are optoelectronic components which include an optoelectronic device mounted on a silicon substrate and a flexible circuit electrically connected to the optoelectronic device.
Type: Application
Filed: August 18, 2006
Publication date: December 14, 2006
Applicant: Rohm and Haas Electronic Materials LLC
Inventors: David Sherrer, Noel Heiks

Optical device package
Publication number: 20060278814
Abstract: An optical microbench configured to facilitate wafer-level testing of opto-electronic devices is provided. The optical microbench includes an optoelectronic device mounted to a wafer in which the optical microbench is provided.

The optical microbench also includes a beam deflector provided in the wafer and disposed along the optical path of the optoelectronic device. The beam deflector is configured to deflect a portion of the optical path to lie along a direction oriented out of the plane of the wafer. The optical microbench further includes an optical feed-through disposed along the optical path between the optoelectronic device and the beam deflector. The optical feed-through is configured to conduct an optical signal between the beam deflector and the optoelectronic device. A method for testing optoelectronic devices at the wafer level is also provided.
Type: Application
Filed: June 5, 2006
Publication date: December 14, 2006
Applicants: Rohm and Haas Electronic Materials LLC
Inventor: David Sherrer

Optical waveguide devices and methods of fabricating the same
Publication number: 20060275012
Abstract: A first waveguide holding member has a first transverse surface region and a first optical waveguide having an end terminating at the first transverse surface region. A second waveguide holding member has a second transverse surface region which confronts the first transverse surface region of the first waveguide holding member and a second optical waveguide having an end terminating at the second transverse surface region. A guide member is operatively coupled to the first and second waveguide holding members and guides the first waveguide holding member in a transverse direction relative to the second waveguide holding member so as to selectively optically couple and decouple the ends of the first and second optical waveguides.
Type: Application
Filed: June 5, 2006
Publication date: December 7, 2006
Inventors: Dan Steinberg, David Sherrer, Mindaugas Dautartas, Donald Leber

Micro-optical device and method of making same
Publication number: 20060174652
Abstract: Micro-optical devices and methods of making the same are disclosed, wherein the disclosed micro-optical devices and methods include passive alignment features.
Type: Application
Filed: January 19, 2006
Publication date: August 10, 2006
Inventors: Garo Khanarian, Margaret Pafford, David Sherrer

Coaxial waveguide microstructures and methods of formation thereof
Publication number: 20060164190
Abstract: Provided are coaxial waveguide microstructures. The microstructures include a substrate and a coaxial waveguide disposed above the substrate. The coaxial waveguide includes: a center conductor; an outer conductor including one or more walls, spaced apart from and disposed around the center conductor; one or more dielectric support members for supporting the center conductor in contact with the center conductor and enclosed within the outer conductor; and a core volume between the center conductor and the outer conductor, wherein the core volume is under vacuum or in a gas state. Also provided are methods of forming coaxial waveguide microstructures by a sequential build process and hermetic packages which include a coaxial waveguide microstructure.
Type: Application
Filed: December 22, 2005
Publication date: July 27, 2006
Applicant: Rohm and Haas Electronic Materials LLC
Inventors: David Sherrer, John Fisher

Optoelectronic component
Publication number: 20060006320
Abstract: Provided are optoelectronic components which include an optoelectronic device and a structure for self-aligning the optoelectronic device. Also provided are optoelectronic modules and methods of forming optoelectronic components.
Type: Application
Filed: September 9, 2005
Publication date: January 12, 2006
Applicant: ROHM AND HAAS ELECTRONIC MATERIALS LLC **Inventors:** David Sherrer, Noel Heiks

Optoelectronic component
Publication number: 20060006321
Abstract: Provided are optoelectronic components which include an optoelectronic device and a structure for self-aligning the optoelectronic device. Also provided are optoelectronic modules and methods of forming optoelectronic components.
Type: Application
Filed: September 9, 2005
Publication date: January 12, 2006
Applicant: ROHM AND HAAS ELECTRONIC MATERIALS LLC
Inventors: David Sherrer, Noel Heiks

Optoelectronic component
Publication number: 20060006313
Abstract: Provided are optoelectronic components which include an optoelectronic device and a structure for self-aligning the optoelectronic device. Also provided are optoelectronic modules and methods of forming optoelectronic components.
Type: Application
Filed: September 7, 2005
Publication date: January 12, 2006
Applicant: ROHM AND HAAS ELECTRONIC MATERIALS LLC
Inventors: David Sherrer, Noel Heiks

Optoelectronic component
Publication number: 20050218317
Abstract: Provided are optoelectronic components which include an optoelectronic device and a structure for self-aligning the optoelectronic device. Also provided are optoelectronic modules and methods of forming optoelectronic components.
Type: Application
Filed: May 27, 2005
Publication date: October 6, 2005
Applicant: ROHM AND HAAS ELECTRONIC MATERIALS LLC
Inventors: David Sherrer, Noel Heiks

Optoelectronic component
Publication number: 20050205771
Abstract: Provided are optoelectronic components which contain an optoelectronic device and an encapsulant.
Type: Application
Filed: May 9, 2005
Publication date: September 22, 2005
Applicant: ROHM AND HAAS ELECTRONIC MATERIALS LLC
Inventors: David Sherrer, Noel Heiks

Optical waveguide termination with vertical and horizontal mode shaping
Publication number: 20050202554
Abstract: An optical device is disclosed which includes a single-mode waveguide (700) which supports a first optical mode in a first region and a second optical mode in a second region. The waveguide includes a guiding layer (703) having at least one wing (750) extended outwardly from the guiding layer (703). The guiding layer (703) may desirably have a rib waveguide (706, 707) cross sectional shape at the wings. The wings (750) decrease in width along the length of the guiding layer to convert a rib waveguide mode at the wings to a channel waveguide mode.
Type: Application
Filed: December 5, 2002
Publication date: September 15, 2005
Inventors: Hui Luo, Mindaugas Dautartas, Dan Steinberg, David Sherrer

Optical device package
Publication number: 20050180701
Abstract: An optical device package includes a substrate having a top portion with an a recess for receiving an optical semiconductor component and an elongated linear groove for receiving an optical fiber. The optical fiber is positioned within the groove in said substrate such that the top surface of the optical fiber is substantially at or below the upper

surface of the substrate and the optical fiber is operatively aligned with the optical semiconductor component for the transfer of optical signals therebetween. A frame is hermetically sealed to the upper surface of the substrate.
Type: Application
Filed: March 15, 2005
Publication date: August 18, 2005
Applicant: Shipley Company, L.L.C.
Inventors: Dan Steinberg, David Sherrer, Mindaugas Dautargas

Optical interface assembly and method of formation
Publication number: 20050163431
Abstract: Optical interface assemblies are provided. The optical interface assemblies include a first portion having a plurality of optical waveguides. The first portion is configured for mating engagement with an optical fiber connector. A second portion is mated to the first portion. The second portion is configured for mating engagement with an electronic substrate that includes an embedded waveguide assembly. The first and second portions are further configured so as to align the plurality of optical waveguides, at a first end of the first portion, with a plurality of corresponding waveguide cores of the embedded waveguide assembly. The first and second portions are further configured so as to align the plurality of optical waveguides, at a second end of the first portion, with a plurality of corresponding optical fibers in the optical fiber connector. Also provided are electronic assemblies and methods for coupling optical fibers with electronic substrate embedded waveguides.
Type: Application
Filed: December 22, 2004
Publication date: July 28, 2005
Inventors: Matthew Moynihan, Bruno Sicard, Carl Colangelo, John Cahalen, Brian Amos, Kevin Horgan, John Fisher, David Sherrer

Device package and method for the fabrication and testing thereof
Publication number: 20050110157
Abstract: Provided are methods of forming sealed via structures. One method involves: (a) providing a semiconductor substrate having a first surface and a second surface opposite the first surface; (b) forming a layer on the first surface of the substrate; (c) etching a via hole through the substrate from the second surface to the layer, the via hole having a first perimeter at the first surface; (d) forming an aperture in the layer, wherein the aperture has a second perimeter within the first perimeter; and (e) providing a conductive structure for sealing the via structure. Also provided are sealed via structures, methods of detecting leakage in a sealed device package, sealed device packages, device packages having cooling structures, and methods of bonding a first component to a second component.
Type: Application
Filed: September 15, 2004
Publication date: May 26, 2005
Applicant: Rohm and Haas Electronic Materials, L.L.C.
Inventors: David Sherrer, Larry Rasnake, John Fisher

Device package and methods for the fabrication and testing thereof
Publication number: 20050111797
Abstract: Provided are optoelectronic device packages. The packages include a base substrate having an optoelectronic device mounting region on a surface of the base substrate and a lid mounting region. An optoelectronic device is mounted on the optoelectronic device mounting region. A lid is mounted on the lid mounting region to form an enclosed volume between the base substrate and the lid. The optoelectronic device is in the enclosed volume. The lid has an optically transmissive region suitable for transmitting light of a given wavelength along an optical path to or from the optoelectronic device, wherein at least a portion of the lid mounting region is disposed along the optical path below the surface of the base substrate to a depth below the optical path. Also provided are wafer or grid level optoelectronic device packages, wafer- or grid-level optoelectronic device package lid and their methods of formation, and connectorized optoelectronic devices.
Type: Application
Filed: September 15, 2004
Publication date: May 26, 2005
Applicant: Rohm and Haas Electronic Materials, L.L.C.
Inventors: David Sherrer, Larry Rasnake, John Fisher

Optical switch assembly with flex plate and method for making
Publication number: 20050074201
Abstract: An optical switch and method for assembling are described. Optical arrays are mounted on a flex plate with an interface between them. The direction of certain forces on the flex plate allows coupling/decoupling of the optical arrays. The flex plate includes an area which exhibits a different flex profile than the remainder of the flex plate and that is located beneath the optical arrays interface. Flexing of the flex plate optically couples the optical arrays. A tool with grooves is used to align the optical arrays relative to each other. The tool uses grooves and spheres to mate with the optical arrays in such a way as to provide an appropriate interface between the optical arrays.
Type: Application
Filed: September 30, 2004
Publication date: April 7, 2005
Inventors: David Sherrer, John Fisher

Method of fabricating optical filters
Publication number: 20050003665
Abstract: A method of fabricating optical filter is disclosed. The method includes providing the substrate and selectively etching the substrate to form a plurality of freestanding layers. A plurality of dielectric layers is disposed over an outer surface of each of the freestanding layers. The resultant optical filters may be used in a variety of applications including etalon applications.
Type: Application
Filed: June 2, 2004
Publication date: January 6, 2005
Inventors: Dan Steinberg, Mindaugas Dautartas, David Sherrer