

# Jim Fraser Patent List

**Title:** Fluid Flow Modifier And Fluid Treatment System Incorporating Same  
**Document No.:** US9771959B2  
**Filing Date:** January 21, 2013  
**Abstract:** A fluid flow modifier device comprising: an inlet portion for receiving a flow of fluid; an outlet portion for outputting the flow of fluid; and a flow modifier portion disposed between the inlet portion and the outlet portion, the flow modifier portion comprising an outer portion comprising a closed cross-section to the flow of fluid and an inner porous portion configured such that at least a...  
**Inventors:** Jim Fraser

**Title:** Fluid Treatment System  
**Document No.:** US8507874  
**Issue Date:** April 2, 2012  
**Abstract:** A fluid treatment system having: an inlet; an outlet; and a fluid treatment zone disposed therebetween. The fluid treatment zone has: (i) an elongate first radiation source assembly having a first longitudinal axis, and (ii) an elongate second radiation source assembly having a second longitudinal axis. The first and second longitudinal axes are non-parallel to each other and to a direction of...  
**Inventors:** Jim Fraser, Boyko Tchavdarov, Kezele, Dusko, Marcu, Mike, Gratton, Rich, Dave Olson, From, Wes

**Title:** Fluid Filter Device  
**Document No.:** US20130206674  
**Issue Date:** Issued August 19, 2011  
**Abstract:** There is disclosed a fluid filter device. The fluid filter device comprises: a primary filter section having a first porous section; and a secondary filter section having second porous section; wherein: (i) the primary filter section and the secondary filter section are in fluid communication with one another, and (ii) the first porous section has a greater porosity than the second porous section....  
**Inventors:** Jim Fraser, Ron Cook, Latimer, Glen

**Title:** Excimer Radiation Lamp Assembly, And Radiation Source Module And Fluid Treatment System Containing Same  
**Document No.:** US20120001098  
**Filing Date:** July 5, 2011  
**Abstract:** An excimer radiation lamp assembly. The lamp assembly comprises a radiation emitting region and at least one substantially radiation opaque region. The radiation emitting region comprises a pair of dielectric elements disposed in a substantially coaxial arrangement.  
**Inventors:** Jim Fraser, Sasges, Mike

**Title:** Fluid treatment System  
**Document No.:** US20110240880  
**Filing Date:** June 15, 2011  
**Abstract:** There is described a fluid treatment system which may which may be used with radiation sources that do not require a protective sleeve--e.g., excimer radiation sources. An advantage of the present fluid system treatment is that the radiation sources may be removed from the fluid treatment zone without necessarily having to shut down the fluid treatment system, remove the fluid, break the seals...  
**Inventors:** Jim Fraser, Sasges, Mike

**Title:** Ultraviolet Radiation Light Emitting Diode Device  
**Document No.:** US20110089347  
**Filing Date:** November 29, 2010  
**Abstract:** There is disclosed an ultraviolet radiation device. The device comprises a base portion, a plurality of semiconductor structures connected to the base portion and an ultraviolet radiation transparent element connected to the plurality of semiconductor structures. Preferably: (i) the at least one light emitting diode is in direct contact with the ultraviolet radiation transparent element, or (ii)...  
**Inventors:** Jim Fraser, Knight, Douglas, Sasges, Mike

**Title:** Fluid Treatment System  
**Document No.:** US20100282661  
**Filing Date:** May 11, 2010  
**Abstract:** There is described a fluid treatment system comprising: (i) a fluid inlet; (ii) a fluid outlet; and (iii) a fluid treatment zone in fluid communication with the fluid inlet and the fluid outlet. The fluid treatment zone comprises a housing within which is disposed a fluid separation section (the separation section may include a single separation device or a combination of two or more similar or...  
**Inventors:** Jim Fraser

**Title:** Optical Radiation Sensor System  
**Document No.:** US8003951  
**Issue Date:** March 22, 2010  
**Abstract:** An optical radiation sensor system having: a housing having a distal portion for receiving radiation from the radiation source and a proximal portion; a sensor element in communication with the proximal portion, the sensor element configured to detect and respond to incident radiation received from the radiation source; and motive structure configured to move the housing with respect to the sensor...  
**Inventors:** Jim Fraser, Gerardi-Fraser, Jennifer, Helin, Joel

**Title:** Fluid Treatment System  
**Document No.:** US20110180723  
**Filing Date:** July 15, 2009  
**Abstract:** There is described a fluid treatment system in which fluid to be treated is impinged under pressure on a radiation emitting surface. The fluid treatment system includes at least one radiation source having a radiation emitting surface and at least one nozzle element having a fluid discharge opening spaced from the radiation emitting surface. The fluid discharge opening is configured to impinge..  
**Inventors:** Jim Fraser, Sasges, Mike

**Title:** Radiation Lamp And Radiation Source Module Incorporating Same  
**Document No.:** US8167654  
**Issue Date:** April 4, 2008  
**Abstract:** There is disclosed a lamp device including a longitudinal axis, a first elongate electrical connector and a second elongate electrical connector, each of the first elongate electrical connector and the second elongate connector being non-parallel with respect to the longitudinal axis. The present lamp device provides a reliable electric connection on the one hand, yet is relatively inexpensive,...  
**Inventors:** Jim Fraser, Elku, Joe, Gratton, Rich

**Title:** Fluid Treatment System  
**Document No.:** US8148699  
**Issue Date:** August 4, 2008  
**Abstract:** The present invention relates to a fluid treatment system comprising: an inlet; an outlet; and a fluid treatment zone disposed between the inlet and the outlet. The fluid treatment zone has disposed therein: (i) an elongate first radiation source assembly having a first longitudinal axis, and (ii) an elongate second radiation source assembly having a second longitudinal axis. The first..  
**Inventors:** Jim Fraser, Gratton, Rich, From, Wes, Kezele, Dusko, Olson, David, Tchavdarov, Boyko, Marcu, Mike

**Title:** Fluid Treatment System  
**Document No.:** US8148699  
**Issue Date:** December 29, 2008  
**Abstract:** There is described a fluid treatment system which may which may be used with radiation sources that do not require a protective sleeve—e.g., excimer radiation sources. An advantage of the present fluid system treatment is that the radiation sources may be removed from the fluid treatment zone without necessarily having to shut down the fluid treatment system, remove the fluid, break the seals...  
**Inventors:** Jim Fraser, Sasges, Mike

**Title:** **Ultraviolet Radiation Light Emitting Diode Device**  
**Document No.:** US7842932  
**Issue Date:** June 2, 2008  
**Abstract:** There is disclosed an ultraviolet radiation device. The device comprises a base portion, a plurality of semiconductor structures connected to the base portion and an ultraviolet radiation transparent element connected to the plurality of semiconductor structures. Preferably: (i) the at least one light emitting diode is in direct contact with the ultraviolet radiation transparent element, or (ii)...

**Inventors:** Jim Fraser, Knight, Douglas, Sasges, Mike

**Title:** **Optical Radiation Sensor System**  
**Document No.:** US7683339  
**Issue Date:** September 20, 2007  
**Abstract:** An optical radiation sensor system having: a housing having a distal portion for receiving radiation from the radiation source and a proximal portion; a sensor element in communication with the proximal portion, the sensor element configured to detect and respond to incident radiation received from the radiation source; and motive structure configured to move the housing with respect to the sensor...

**Inventors:** Jim Fraser, Jennifer Gerardi-Fraser, Joel Helin

**Title:** **Radiation Lamp And Radiation Source Module Incorporating Same**  
**Document No.:** US7390225  
**Issue Date:** January 24, 2007  
**Abstract:** There is disclosed a lamp device including a longitudinal axis, a first elongate electrical connector and a second elongate electrical connector, each of the first elongate electrical connector and the second elongate connector being non-parallel with respect to the longitudinal axis. The present lamp device provides a reliable electric connection on the one hand, yet is relatively inexpensive,...

**Inventors:** Jim Fraser, Joseph Elku, Gratton, Rich

**Title:** **Excimer Radiation Lamp Assembly, And Source Module And Fluid Treatment System Containing Same**  
**Document No.:** US20090267004  
**Filing Date:** December 21, 2006  
**Abstract:** There is described an excimer radiation lamp assembly. The lamp assembly comprise a radiation emitting region and at least one substantially radiation opaque region. The radiation emitting region comprises a pair of dielectric elements disposed in a substantially coaxial arrangement.

**Inventors:** Jim Fraser, Sasges, Mike

**Title:** Excimer Radiation Lamp Assembly, And Source Module And Fluid Treatment System Containing Same  
**Document No.** US7960705  
**Issue Date:** December 21, 2006  
**Abstract:** There is described an excimer radiation lamp assembly. The lamp assembly comprises: an elongate member having an annular cross-section to define an elongate passageway aligned with a longitudinal axis of the lamp assembly; an electrode element in electrical connection with at least a portion of the elongate passageway; and a cooling element disposed in the elongate passageway, the cooling element...  
**Inventors:** Jim Fraser, Sasges, Mike

**Title:** Radiation Lamp and Radiation Source Module Incorporating Same  
**Document No.:** US20110227473  
**Filing Date:** November 22, 2006  
**Abstract:** A lamp device is disclosed. The lamp device comprises a first electrical connector and a second electrical connector located at a first end portion of the lamp device. The first end portion of the lamp device is received in a receptacle of a first base portion. A first locking portion is included for securing the first base portion to the first end portion. The present radiation lamp device...  
**Inventors:** Jim Fraser, Michael Rodgers, Sasges, Mike, Joseph Elku

**Title:** Radiation Lamp and Radiation Source Module Incorporating Same  
**Document No.:** US8318007  
**Issue Date:** August 31, 2006  
**Abstract:** The present invention relates to an ultraviolet radiation lamp. The lamp comprises a substantially sealed cavity comprising a mercury-containing material; a filament disposed in the sealed cavity; and an electrical control element in contact with the filament, the electrical control element configured to adjust or maintain a temperature of the mercury-containing material with respect to a prescribed...  
**Inventors:** Jim Fraser, Joseph Elku, Sasges, Mike

**Title:** Radiation Lamp and Radiation Source Module Incorporating Same  
**Document No.:** US8338808  
**Issue Date:** May 15, 2006  
**Abstract:** The present invention relates to an ultraviolet radiation lamp. The lamp comprises: (i) a substantially sealed cavity comprising a mercury-containing material; and (ii) a heating unit disposed exteriorly with respect to the cavity. The heating unit is disposed in contact with a first portion of the cavity comprising the mercury-containing material. The heating unit has adjustable heat output.  
**Inventors:** Jim Fraser, Sasges, Mike

**Title:** Radiation Sensor Device And Fluid Treatment System Containing Same  
**Document No.:** US7829862  
**Issue Date:** June 27, 2005  
**Abstract:** The invention relates to a radiation sensor device comprising a housing and a plurality of radiation sensor modules secured to the housing. Each radiation sensor module comprises a radiation sensor arranged to detect radiation incident on the radiation source module. Preferably, each radiation sensor module contains an entire so-called optical train to allow for calibration of the detector (e.g.,...  
**Inventors:** Jim Fraser, Dragoi, Catalina, Verdun, Alex, Tanya Molyneux, Jennifer Gerardi-Fraser

**Title:** Radiation Sensor Device And Fluid Treatment System Containing Same  
**Document No.:** US20060006339  
**Filing Date:** June 27, 2005  
**Abstract:** The invention relates to a radiation sensor device comprising a housing, a radiation sensor secured with respect to a first portion of the housing and a heat pipe in thermal communication with the first portion of the housing, the heat pipe being configured to transfer heat from portion of the house to a second portion of the housing remote from the first portion of the housing. The heat pipe may...  
**Inventors:** Jim Fraser, Jennifer Gerardi-Fraser, Tanya Molyneux, Dragoi, Catalina

**Title:** Fluid Treatment System  
**Document No.:** US7408174  
**Issue Date:** March 14, 2005  
**Abstract:** The present invention relates to a fluid treatment system comprising: an inlet; an outlet; and a fluid treatment zone disposed between the inlet and the outlet. The fluid treatment zone has disposed therein: (i) an elongate first radiation source assembly having a first longitudinal axis, and (ii) an elongate second radiation source assembly having a second longitudinal axis. The first...  
**Inventors:** Jim Fraser, Boyko Tchavdarov, Dave Olson, Gratton, Rich, Marcu, Mike, Kezele, Dusko, From, Wes

**Title:** Fluid Treatment System  
**Document No.:** US7045102  
**Issue Date:** October 6, 2003  
**Abstract:** A fluid treatment system for placement in a flanged pipe fluid conveyance system includes: a first flanged opening and a second flanged opening in substantial alignment to define a flow axis aligned substantially parallel to a direction of fluid flow though the first opening and the second opening; and a third flanged opening comprising a first cover element. The first cover element has connected...  
**Inventors:** Jim Fraser, Steve Bakker, From, Wes