be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. A surgical isolator for protecting the patient and medical personnel from airborne contaminants produced during laser surgery and other surgical procedures comprising an inner enclosure which is adapted to be positioned around the surgical field on the patient forming an inner chamber, an outer enclosure having an upper surface surrounding the inner chamber, a plurality of openings in each enclosure, the openings of the inner enclosure aligned with the openings in the outer enclosure, a plurality of open-ended sleeves attached to the outer enclosure through which medical personnel can extend their hands through the sleeves and the openings into the inner chamber, each sleeve having an elastic band adjacent the end open end of the sleeve adapted to grip the arm extending through the opening and restrict the flow of air from the inner, and outer chambers through the open end of the sleeve, an exhaust fan and exhaust line connected to the inner enclosure for drawing air and entrained contaminated particles produced by the surgery out of the inner chamber through the exhaust line, openings in a wall of the inner enclosure, and a supply blower for supplying the outer chamber with air at a pressure above the pressure in the inner chamber to insure that air flows from the outer chamber to the inner chamber so that entrained contaminated particles produced by the surgery are confined to the inner chamber and are carried out of the inner chamber by the exhaust fan.

2. The surgical isolator of claim 1 further provided with a plurality of inner open-ended sleeves of flexible material having one end attached to the inner enclosure with each sleeve surrounding an opening in the inner enclosure so that medical personnel can extend an arm through an outer and an inner sleeve and into the inner chamber.

3. The surgical isolator of claim 1 in which a portion of the upper surface of the outer enclosure is made of a relatively stiff optically transparent material to allow a clear view of the procedure being conducted in the inner chamber.

4. The surgical isolator of claim 1 further provided with an instrument lock at one end of the isolator, the instrument lock having a first door between the lock and the inner chamber, openings in the door through which air from the outer chamber can flow into the lock and into the inner chamber, and a second door providing access to the instrument lock.

5. The surgical isolator of claim 4 in which the instrument lock is further provided with a side having an opening and an open ended sleeve having one end attached to the side around the opening to allow medical personnel to extend a hand through the sleeve into the instrument lock, the sleeve having an elastic band urging the open end closed to restrict the flow of air from the instrument lock.

6. The surgical isolator of claim 1 in which the inner enclosure comprises a first and second side wall and an end wall, the end wall connected to the exhaust line.

7. The surgical isolator of claim 1 further comprising an air handling unit comprising a housing divided by a separation plate into an evacuation compartment and a supply compartment, the evacuation compartment having an air inlet connected to means for neutralizing the presence of live cellular and active viral matter, means for ionizing neutralized particulate matter, an evacuation filter for trapping ionized particulate matter connected to the evacuation blower and an air discharge outlet, the supply compartment having an air-make up inlet and supply filter connected to the supply blower for filtering the filtered air and ambient air, and the separator plate having a recirculating air control valve for controlling the flow of filtered evacuated air into the air supply compartment.

8. The surgical isolator of claim 7, in which the evacuation and supply filters of the air handling assembly are high efficiency particle air filters capable of containing submicron sized particles.

9. The surgical isolator of claim 7, in which the neutralizing means comprises a U-shaped chamber having an ultraviolet lamp around which evacuated air is drawn.

10. The surgical isolator of claim 7 in which the neutralizing means comprises a chamber having a solution containing a biocide/virucide through which the evacuated air is drawn.

11. Method of isolating a surgical field and any air-borne contaminants generated during a procedure in that field, the method comprising the steps of:

(a) placing a first barrier around the surgical field of the procedure to create an inner chamber around the wound site;

(b) enveloping the first barrier in a second barrier to create an outer chamber around the inner chamber;

(c) providing fluid communication between the inner and outer chambers;

(d) evacuating the inner chamber;

(e) neutralizing any live cellular and active viral matter and filtering particulate matter from the air evacuated from the inner chamber; and

(f) introducing air into the outer chamber.

12. The method of claim 11 in which live cellular and viral matter is neutralized by irradiating the matter with ultraviolet radiation.

13. The method of claim 11 in which live cellular and viral matter is neutralized by bubbling the matter through a solution containing a biocide/virucide.

14. The method of claim 11, wherein air is introduced into the outer chamber simultaneously as the inner chamber is evacuated.

15. The method of claim 11, further comprising the step of recirculating a portion of the neutralized and filtered air into the outer chamber.

16. A surgical isolator for protecting the patient and medical personnel from contaminants produced during a surgical procedure, comprising:

an inner enclosure adapted to be positioned around the surgical site to form an inner chamber;

an outer enclosure surrounding the inner enclosure forming an outer chamber;

a plurality of openings in the inner and outer enclosures, each opening in the outer enclosure being aligned with an opening in the inner enclosure and having resilient means to restrict the flow of air;

air drawing means connected to the inner enclosure for drawing air out of the inner chamber for producing negative pressure in the inner chamber for keeping contaminants from the inner chamber from entering the outer chamber; and

air introducing means connected to the outer enclosure for introducing air into the outer chamber.

17. The surgical isolator of claim 16, further comprising air filtering means connected to the air drawing means for filtering the air drawn from the inner chamber.

18. The surgical isolator of claim 17, wherein the filtering means is connected to the means for introducing filtered air into the outer chamber.

19. The surgical isolator of claim 16, wherein the air drawing means is an exhaust fan.

20. The surgical isolator of claim 16, wherein the means for introducing air into the outer chamber is a supply blower.

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