Abstract

METHODS, SYSTEMS AND DEVICES FOR OPTICAL STIMULATION OF TARGET CELLS USING AN OPTICAL TRANSMISSION ELEMENT

Stimulation of target cells using light, *e.g., in vivo*, is implemented using a variety of methods and devices. In one such device, target cells are stimulated using an implantable device. The device includes a light source for producing light from electrical power. An optical transmission element is made from a material that is substantially transparent to the light from the light source. This transmission element substantially encases the light source at a proximal end. The transmission element delivers light from the light source to a distal end. The shape and size of the transmission element facilitates implanting of the element within a patient. A fixation portion physically couples to the optical transmission element and secures the device to the patient. A heat dissipation portion removes heat from the near optical transmission element and the light source and dissipates the removed heat through the fixation portion.

Figure 2A