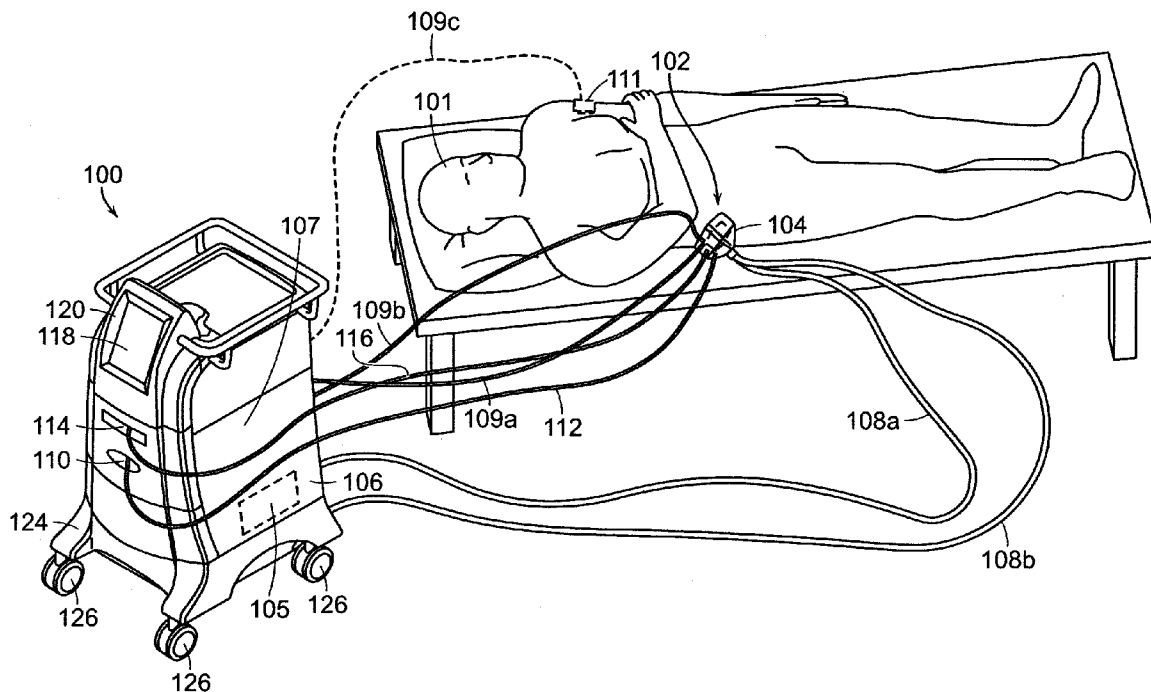


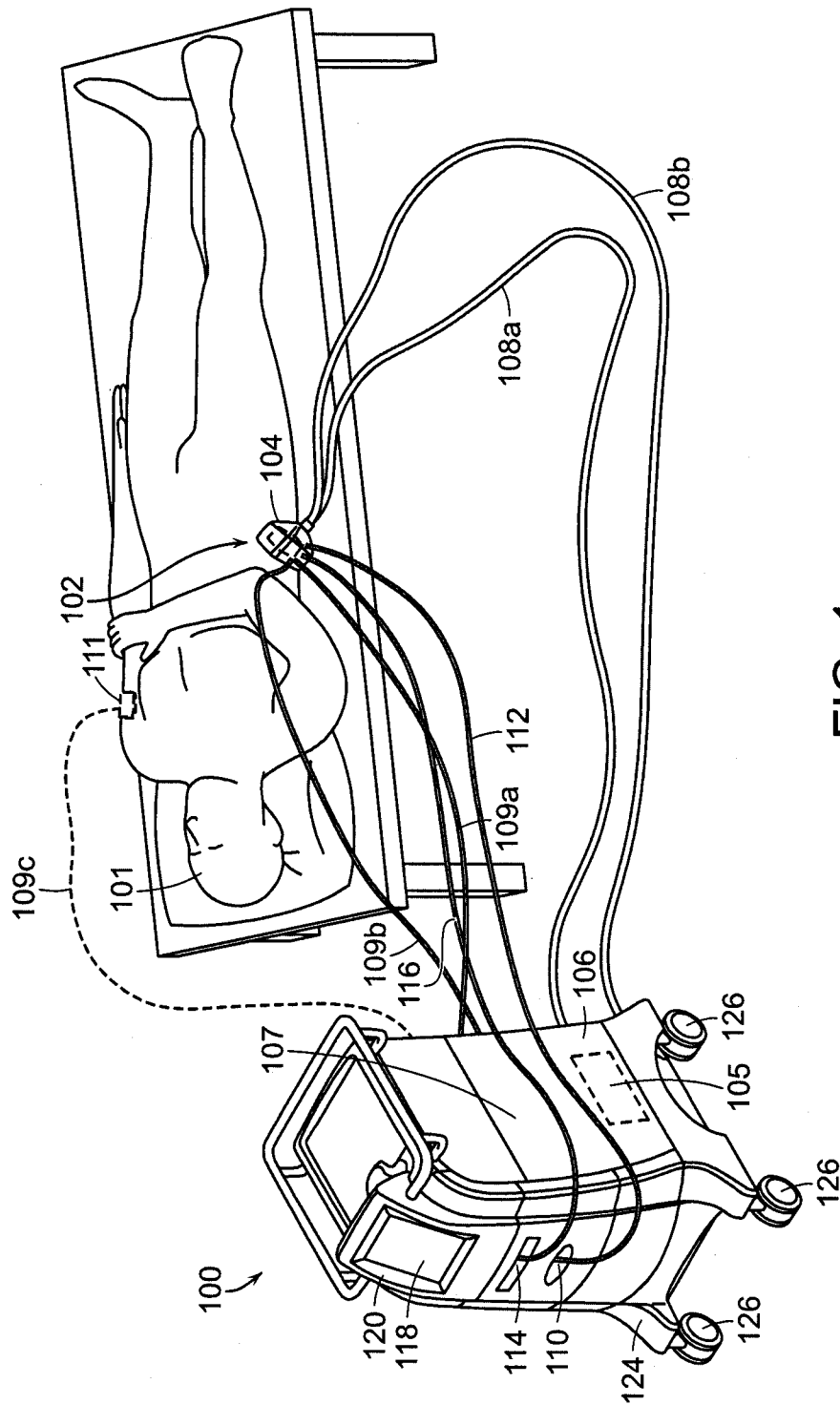


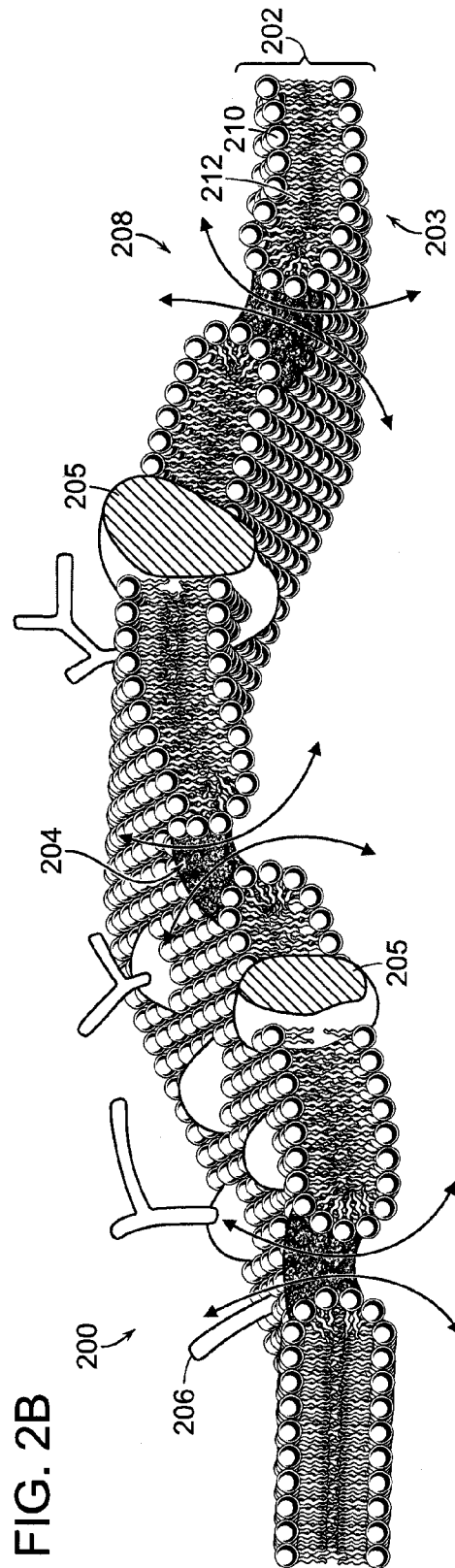
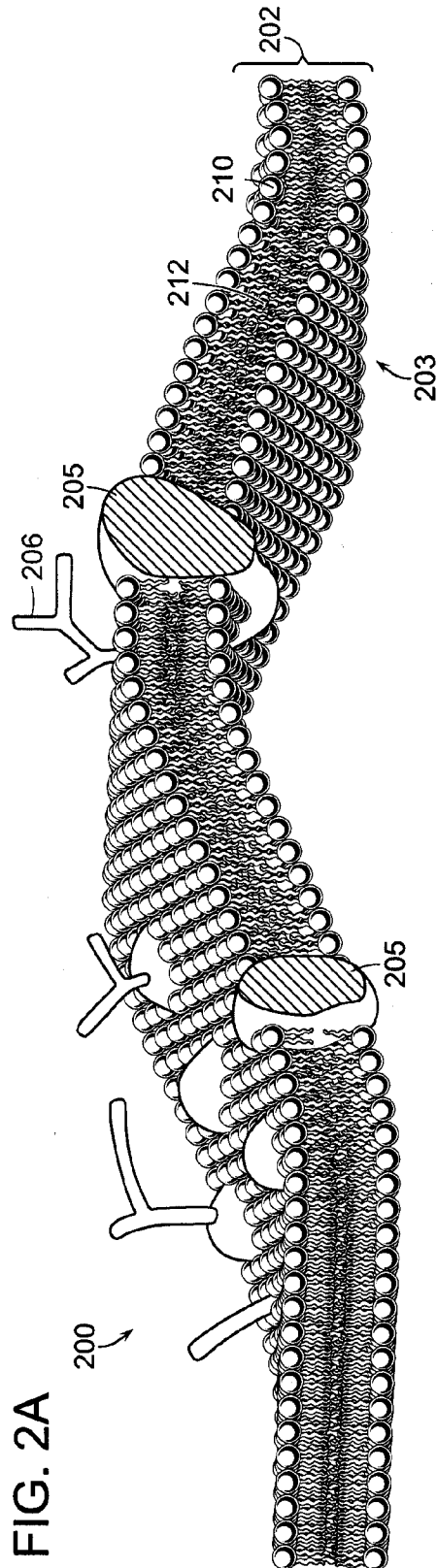
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(19) **United States**(12) **Patent Application Publication****Nanda**(10) **Pub. No.: US 2014/0277219 A1**(43) **Pub. Date: Sep. 18, 2014**(54) **MULTI-MODALITY TREATMENT SYSTEMS, METHODS AND APPARATUS FOR ALTERING SUBCUTANEOUS LIPID-RICH TISSUE**(71) Applicant: **ZELTIQ AESTHETICS, INC.**,
Pleasanton, CA (US)(72) Inventor: **Gurvinder Singh Nanda**, Fremont, CA
(US)(21) Appl. No.: **13/830,413**(22) Filed: **Mar. 14, 2013****Publication Classification**(51) **Int. Cl.**
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A61N 1/40 (2006.01)
A61F 7/00 (2006.01)(52) **U.S. Cl.**
CPC . **A61N 1/327** (2013.01); **A61F 7/00** (2013.01);
A61N 1/403 (2013.01)
USPC **607/3**(57) **ABSTRACT**

Systems and methods that enable tissue cooling applications and delivery of electrical energy to adipose tissue for alteration and reduction of body fat are described herein. Aspects of the disclosure are directed to, for example, temperature-controlled electroporation of subcutaneous lipid-rich cells. Additional aspects of the disclosure are directed to treatment methods for treating a target region of a human subject's body to achieve an alteration of subcutaneous adipose tissue. The method can include, for example, removing heat from the target region of the human subject during a treatment process to cool subcutaneous lipid-rich cells in the target region to a temperature below normal body temperature. Furthermore, the method can include delivering energy to the target region to produce an electric field in an amount sufficient to create pores in membranes of the subcutaneous lipid-rich cells that have been cooled to the temperature below normal body temperature.







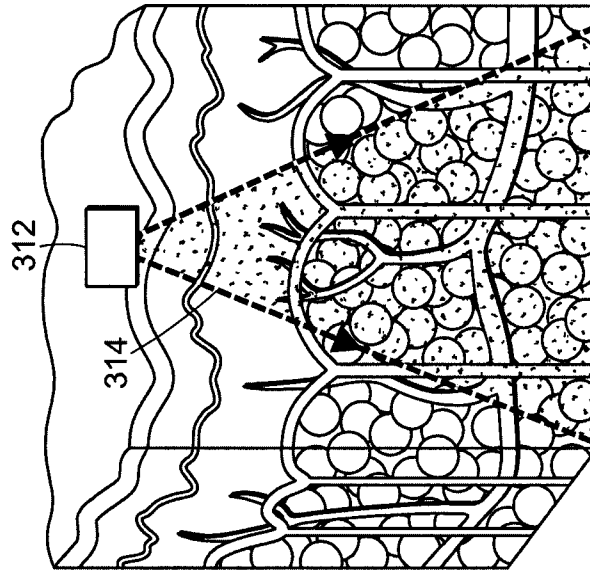


FIG. 3B

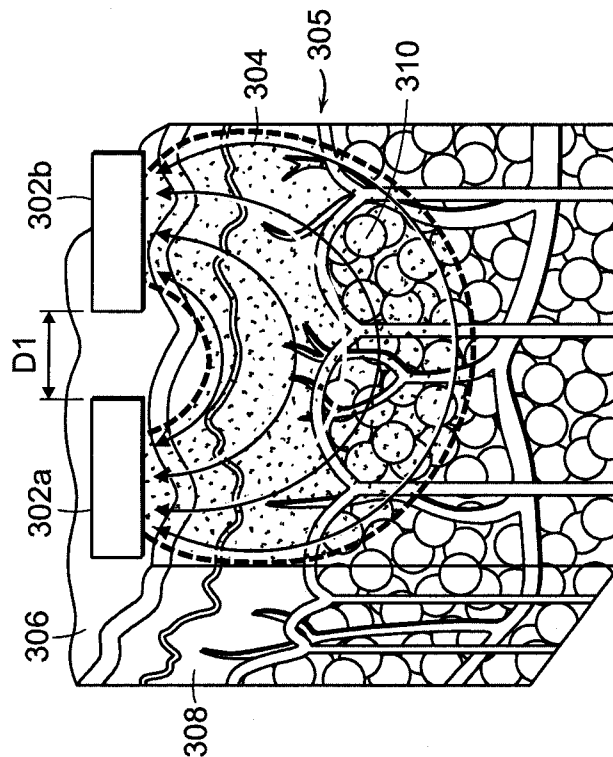


FIG. 3A

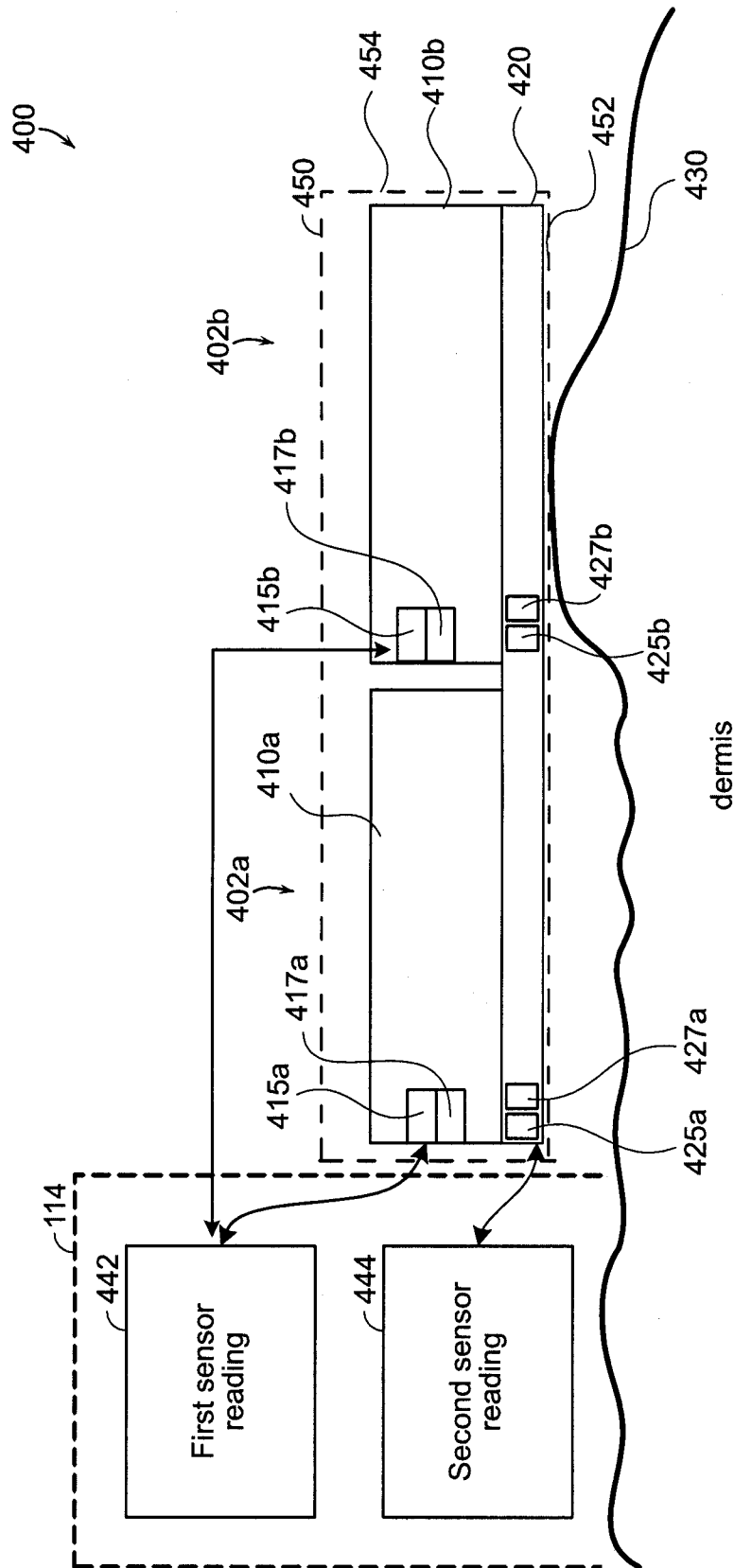


FIG. 4

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