



[54] IONTOPHORETIC DRUG DELIVERY DEVICE HAVING HIGH-EFFICIENCY DC-TO-DC ENERGY CONVERSION CIRCUIT

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[*] Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

[57] ABSTRACT

An iontophoresis system includes a transdermal patch for placement against the skin of a patient and a controller electrically connected to the patch. The patch includes an anode and cathode electrode, and holds an electrolyte and a medication. The controller includes a DC—DC converter circuit which generates an output voltage that is provided to the anode electrode. The controller also includes an adjustable current regulator circuit. The current regulator circuit is coupled to the cathode electrode and is adjustable to provide a desired current flow through the electrodes and the skin of the patient. The DC—DC converter circuit is responsive to the voltage drop across the electrodes and adjusts its output voltage in response to this voltage drop and changes in the impedance of the patient's skin.

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[52] U.S. Cl. 604/20; 607/62

[58] Field of Search 604/20-21; 607/62-63

[56] References Cited

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1 Claim, 2 Drawing Sheets

