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(54) Title: INTRAVENOUS ACCESS DEVICE DETECTING INTRAVENOUS INFILTRATION AND IN-VEIN PLACEMENT

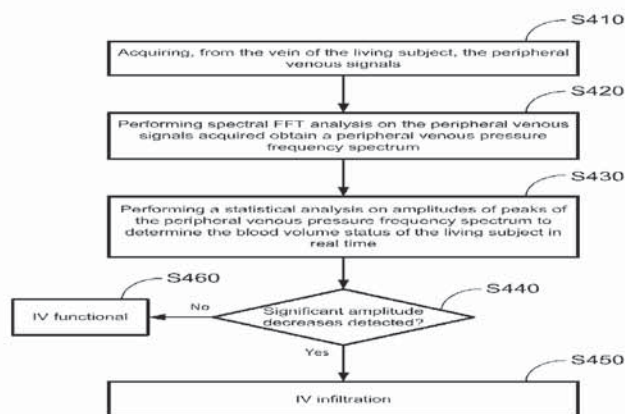


FIG. 4

(57) Abstract: Aspects of the invention relates to systems and methods for monitoring an intravenous (IV) line functionality of an IV device. In one embodiment, the system includes an IV catheter to be inserted into the vein of the living subject, at least one pressure sensor in fluid communication with the IV catheter to acquire peripheral venous signals; and a processing device. The processing device receives the peripheral venous signals from the pressure sensor, performs a spectral analysis on the peripheral venous signals to obtain a peripheral venous pressure frequency spectrum, and then performs a statistical analysis on amplitudes of peaks of the peripheral venous pressure frequency spectrum to determine an IV line functionality of the IV catheter in real time. When the IV line functionality indicates IV infiltration, the processing device may control the fluid controlling device to stop the fluid flow from the fluid source to the IV catheter.