CLAIMS

1. A catheter system comprising:

a catheter, the catheter comprising:

a catheter lumen comprising:

a proximal end;

a distal end;

an inner lumen surface; and

an outer lumen surface; and

a first electrode coupled to the catheter lumen and spaced apart from the distal end of the catheter; and

a second electrode coupled to the catheter lumen and spaced apart from the distal end of the catheter, wherein a distal end of the first electrode comprises a first portion that extends generally perpendicular to a proximal portion of the first electrode to form an L-shape, wherein a distal end of the second electrode comprises a second portion that extends generally perpendicular to a proximal portion of the second electrode to form another L-shape, wherein the first portion of the first electrode is spaced apart from and aligned with the second portion of the second electrode to create an electrode gap between the first portion of the first electrode and the second portion of the second electrode; and

a drug sensor in communication with the first and second electrodes coupled to the catheter lumen,

wherein when the distal end of the catheter lumen is inserted into a blood vessel of a patient:

at least a portion of the first and second electrodes are configured to be embedded within a soft tissue of the patient adjacent the blood vessel,

the first and second electrodes are configured to be in communication with each other through the soft tissue of the patient between the first and second electrodes, and

the drug sensor is configured to detect whether extravasation of a drug has occurred from the blood vessel into the soft tissue of the patient by sensing a characteristic associated with the soft tissue of the patient, the characteristic comprising at least one of inductance, impedance, and capacitance.

2. The catheter system of claim 1, further comprising:

a catheter adapter coupled to the catheter, wherein the catheter adapter comprises an inner surface and an outer surface;

a first attachment feature configured to electrically couple the drug sensor to the first electrode; and

a second attachment feature configured to electrically couple the drug sensor to the second electrode, wherein the first attachment feature and the second attachment feature traverse between the inner surface of the catheter adapter and the outer surface of the catheter adapter.

3. The catheter system of claim 1, wherein:

the first electrode comprises an electrically conductive material deposited on the outer lumen surface; and

the second electrode comprises an electrically conductive material deposited on the outer lumen surface,

wherein the first and second electrodes are spaced apart from each other along the outer lumen surface.

4. The catheter system of claim 1, wherein the proximal portion of the first electrode proximal to the first portion is parallel to the proximal portion of the second electrode proximal to the second portion.