

ABSTRACT

**SYSTEM AND METHOD FOR TESTING ELECTRICAL CIRCUITS
USING A PHOTOELECTROCHEMICAL EFFECT**

A test system for medical devices that does not require physical contact with an electrical site along a conductive path is described. Not having to physical contact an electrical site while performing an electrical continuity test avoids potential damage to the site. The test system includes a fluidic channel that dispenses an electrolytic solution onto a first electrical site on the conductive path. A light source irradiates the first site to thereby induce a photoelectrochemical (PEC) effect at an interface thereof. The PEC effect produces a change in both the potential (i.e., voltage) and current carrying ability in the conductive path. That voltage or current is measured at a second site to determine whether there is electrical continuity or discontinuity between the sites on the conductive path.

Fig. 1