Carbon nanomaterials based chemical sensor for chemical penetration in composite

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Composite structures are built for storing or transferring aggressive chemicals, such as acid tank, marine deck, chemical pipes. Usually, the chemical structures are designed for decades. However, the health of these composite structures is remaining unknown during their service. As a consequence, an in situ monitoring method is in need for this problem. In order to monitor the health of composite structures which are under attacking of aggressive chemicals, we developed a low concentration carbon nanocomposite sensor. The sensing mechanism is based on the penetration of ionic chemicals. Upon the attacking of chemicals, the resistivity of these designed nanocomposite responses. As a result, the health of composite structure could be monitored and the pilot safety could be retained.