

A colorimetric assay for rapid cesium detection

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In this study, we report a promising method for detecting inactive cesium through the observation of color changes in sensor strips impregnated with a Chrysoidine G chemo-indicator. This chemo-indicator is designed to exhibit a powerful detection capability featuring high selectivity and sensitivity to cesium, by means of color discrimination from light yellow to red orange. Interestingly, a portable smart phone camera, which determined the relative red/green/blue values within three seconds, provided us with further information on environmental pollution. Using our new colorimetric reusable sensor platform, the assay shows excellent detection linearity ($R^2=0.97$) of inactive cesium from the contaminated water. Our results will pave the way for portable and versatile sensors and, in turn, for the detection and monitoring of toxic contaminants.

Keywords: Assay, Colorimetric detection, Cesium, Sensitivity