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AChE/agarose gel Coated on ISFET for Methyl-Parathion Sensors

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A sensor for detecting pesticide by the inhibition of acetylcholine esterase (AChE) enzyme have been fabricated by direct immobilization in an agarose matrix on the surface of ion-sensitive field-effect transistors (ISFET). The enzyme entrapment was achieved by mixing AChE (0.01U) in an agarose gel buffer solution, and droping the mixture onto the surface of ISFET. This AChE-ISFET sensor was used to measure methyl-parathion in a phosphate buffer solution. The study of the agarose gel concentration (0.5%, 1.0%, 1.5% and 2.0%) and the storage time of sensor are reported. The device, which will be further explored in detecting other pesticides, is a promising pesticide sensor with simple preparation and capabilities to be developed as a portable device.

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