Sensors based on non-covalent complexes.

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Technology description

Technology Summary
Sensors that ascertain the presence of certain anionic or cationic species in an environment are critical to safety, research, medical diagnostics, and quality assurance and control. Regulation of these species in physiological mechanisms (e.g., metabolism, immune response) is necessary to prevent ailments such as cancer or diabetes. Traditionally, users have detected ions through methods such as titration, gas chromatography, and voltammetry. However, these methods have been eclipsed by fluorescence-based sensors, because of their fast responses, high sensitivity, and simple operation.
Current fluorescent sensors rely on covalent linkage between the analyte and the sensor, which is difficult and costly to produce. These covalent methods also have issues with water solubility and brightness.
This technology overcomes the limitation of traditional covalent sensors, making them cheaper and easier to produce, more functional in water and low pH environments, and increasing their brightness. It is a sensor based on non-covalent complexes that can be modified to detect certain cations and anions. This technology can be utilized in fields ranging from cancer diagnosis, drug discovery, environmental safety, or other research purposes.
Keywords
fluorescent sensor, anion, cation, detection, environmental testing, enzyme activity

Application area

-medical diagnostics
-research
-environmental testing

Advantages

-ability to function in lower pH environments
-water soluble

-use of different fluorophores for different applications
-cheaper materials, easier to make, lower cost

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