

# Naked Eye Detection of Anions

Luminescence sensing systems, which enabled “naked eye detection” of fluoride ion and catecholamines (adrenaline, noradrenaline, and dopamine), were constructed. These systems are based on the ligand exchange reaction between the analyte ion and a luminescent probe ligand at a ternary complex. Ligand exchange reaction between fluoride ion and flavonol in the ternary complex, [Zr(IV)EDTA(flavonol)] depresses the intensity of blue fluorescence, providing a simple fluorescent detection system of fluoride ion. The ternary complex consisting of Tb(III)-EDTA and sulfosalicylic acid as a signaling molecule exhibits the characteristic sharp emission due to energy transfer luminescence, is utilized for the facile determination of catecholamines.

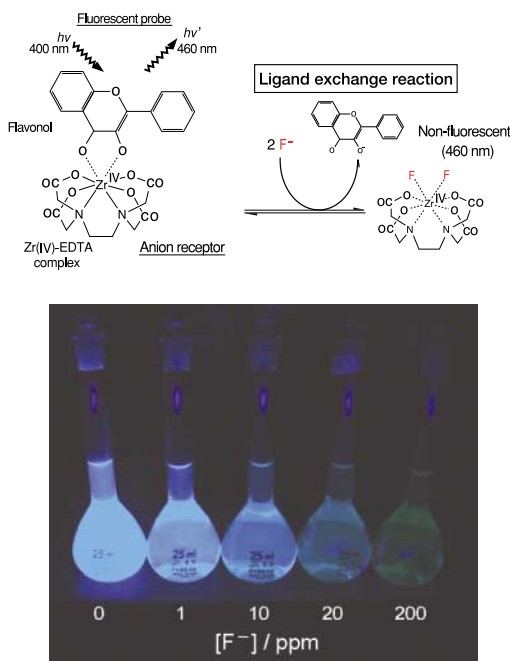
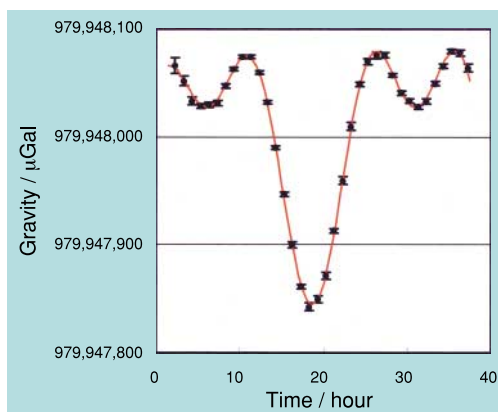


Figure photograph of fluorescence irradiated by handy UV lamp (Ex: 365 nm).

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# Gravity Measurement for Reliable Mechanical Standards

The NMIJ/AIST is responsible for establishing and disseminating measurement standards in Japan. The measurement standards include force, pressure, and torque standards. In order to realize these mechanical standards, weight force is utilized. Therefore it is necessary for us to determine the local gravitational acceleration at a calibration room. Figure shows an example of gravity data using the FG5 absolute gravimeter. The periodic change in gravity due to tides is clearly observed. The NMIJ/AIST participated in the International Comparison of Absolute Gravimeters in 2001 held at the BIPM. As a result, international consistency in gravimetry is ensured among the participating laboratories.



An example of the result of gravity observation.

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