

Supplementary File

Spectrophotometric-based sensor for the detection of multiple fertilizer solutions

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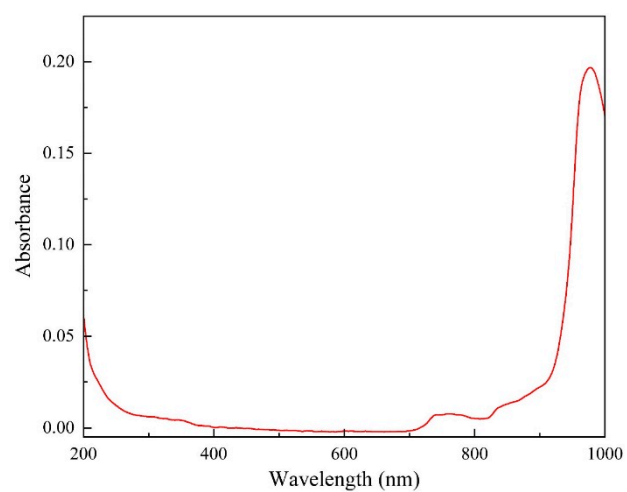


Figure S1. The absorbance curve of K^+ in the 200–1000 nm range

Table S1. The principal parameters of LED light sources

Fertilizer detection channel	Central wavelength	Light-emitting angle	Manufacturer
KNO ₃ channel	256nm	60°	USHIO, Tokyo, Japan
(NH ₄) ₂ SO ₄ channel	405nm	30°	Shenzhen Taiyi Optoelectronics Ltd., Shenzhen, China
KH ₂ PO ₄ channel	700nm	40°	TOSHIBA, Tokyo, Japan
K ₂ SO ₄ channel	1650nm	30°	USHIO, Tokyo, Japan

Table S2. The principal parameters of the photodetectors

Name	Spectral response range	Peak sensitivity wavelength	Sensitivity	Rising time	Manufacturer
LSSPD-U1.2	200–1100 nm	920 nm	0.28 A/W	8 nS	Beijing Lightsensing Technologies Ltd.,
LSIPD-H2	800–1700 nm	1520 nm	0.90A/W	60 nS	Beijing, China