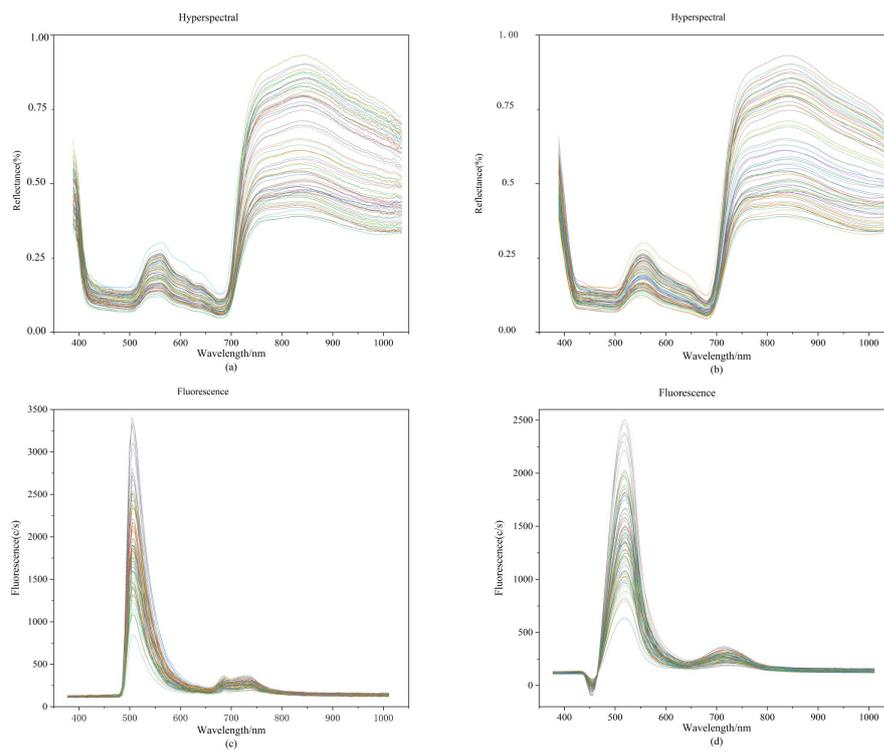
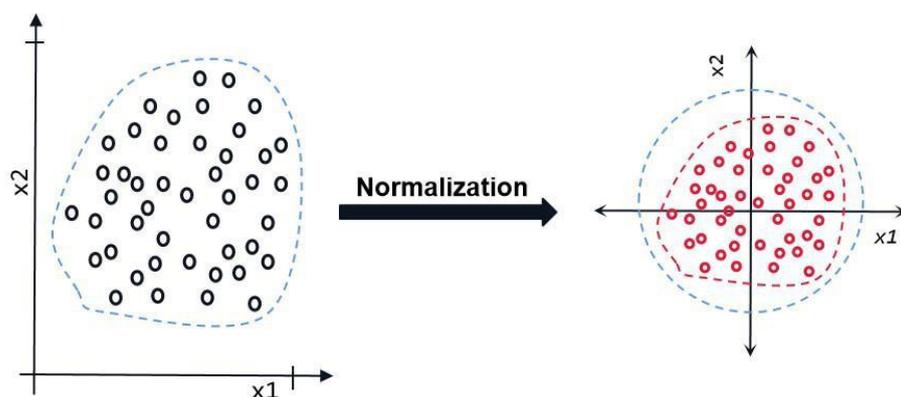




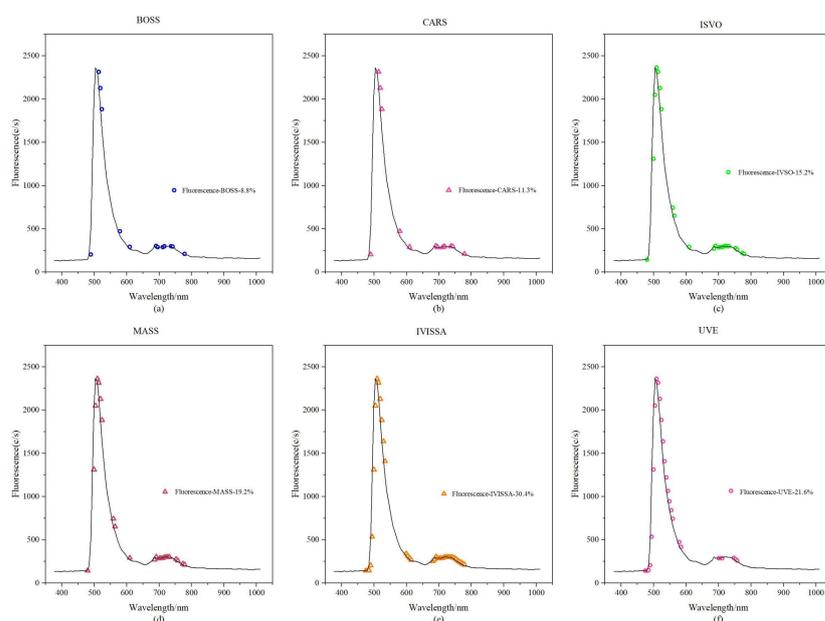
**Figure S1.** The location of the research area.



**Figure S2.** Comparison plot of data after SG convolution smoothing: (a) original hyperspectral data, (b) hyperspectral data after convolution smoothing, (c) original fluorescence spectral data, (d) fluorescence spectral data after convolution smoothing.



**Figure S3.** Schematic representation of the data normalization process.



**Figure S4.** The illustration of the characteristic bands of the fluorescence spectrum obtained by different feature extraction algorithms.(a):Feature Extraction Results of BOSS Method; (b):Feature Extraction Results of CARS Method; (c):Feature Extraction Results of IVSO Method;(d):Feature Extraction Results of MASS Method;(e):Feature Extraction Results of IVISSA Method;(f):Feature Extraction Results of UVE Method.