Electronic Supplementary Material (ESI) for Analytical Methods.
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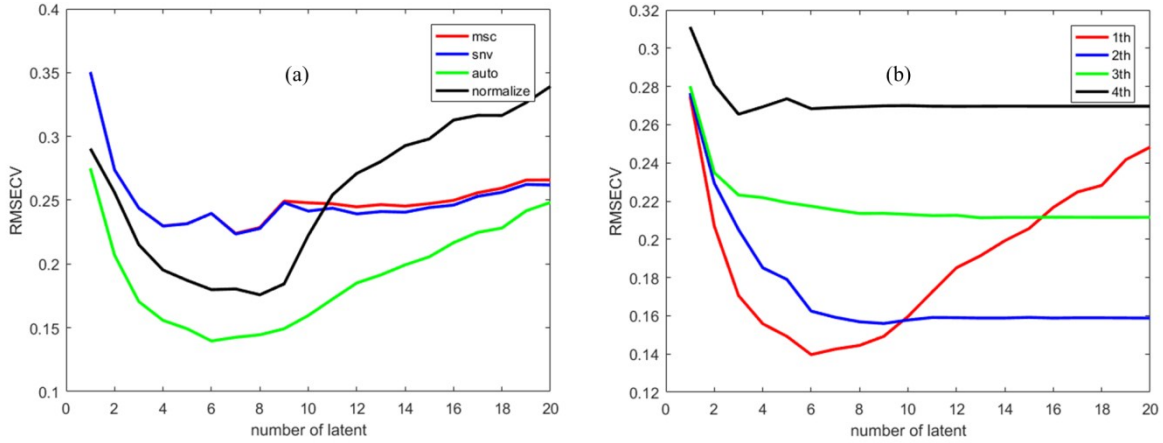

Figure S1. For corn dataset, (a) indicates the error corresponding to the different latent variables obtained by the master spectra under different preprocessing methods, (b) indicates the error corresponding to the different latent variables obtained by the master spectra under different derivation orders. From the figure, we choose autoscale, the first derivation to deal with corn datasets.

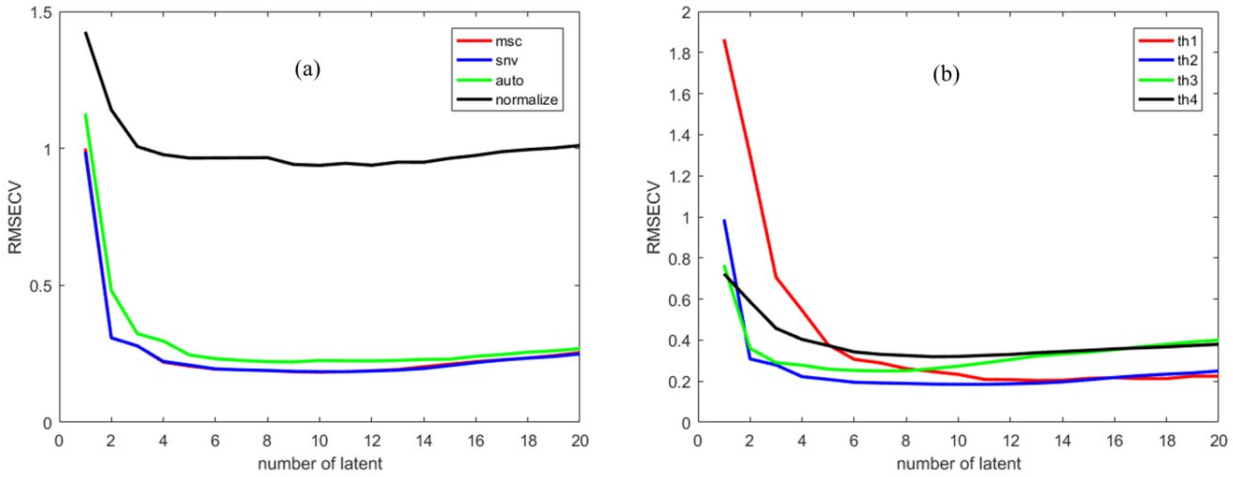

Figure S2. For wheat dataset, (a) indicates the error corresponding to the different latent variables obtained by the master spectra under different preprocessing methods, (b) indicates the error corresponding to the different latent variables obtained by the master spectra under different derivation orders. From the figure, we choose SNV, the second derivation to deal with wheat datasets.

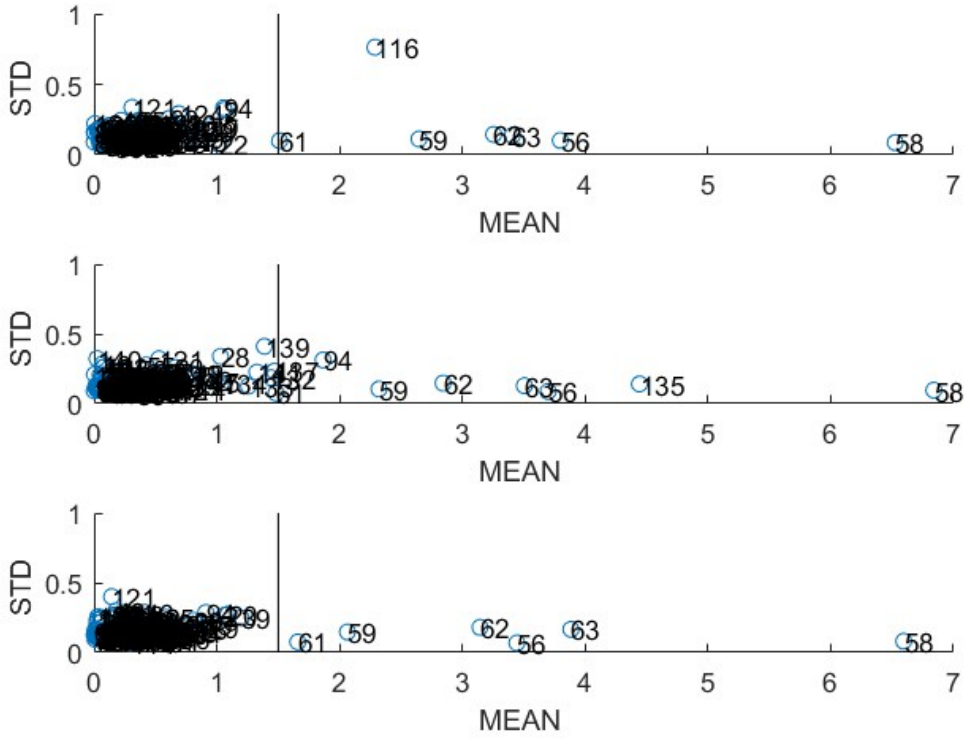

Figure S3. Mean error-standard deviation plot of Monte-Carlo outlier detection method on A5, B5 and C2 validation sets. 56, 58, 61, 62, 63 sample has been deviated from main distribution obviously, and these samples were marked as outliers. For B5, the sample with the index 135 deviates significantly from the normal sample, so it is also rejected.

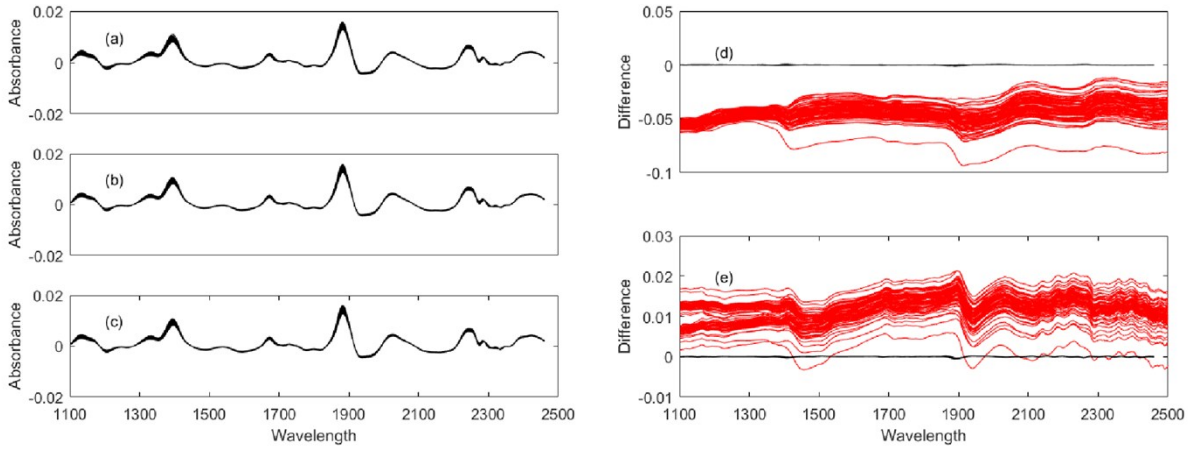

Figure S4. NIR Spectra of corn dataset, (a), (b) and (c) are the transferred spectra of M5, MP5 and MP6 respectively. (d) and (e) shown in red are the spectral differences of M5-MP5 and MP6-MP5 before transferring, and the black are the spectral differences of M5-MP5 and MP6-MP5 after transferring by CT-VPdtw method.

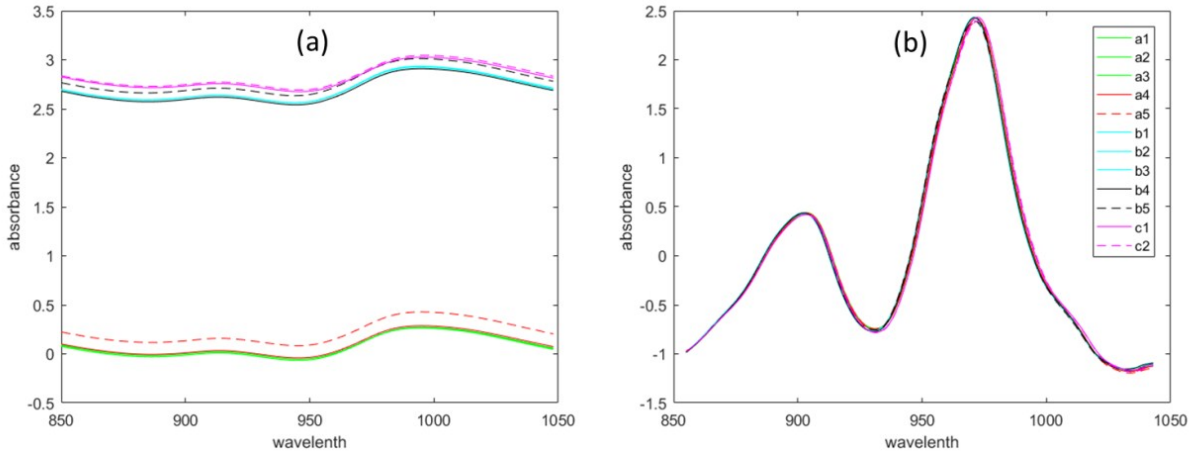

Figure S5. (a) The raw mean spectrum of the 12 instruments. (b) the mean spectrum (after pretreatment with the same method, A1 as the master instrument) of the 12 instruments.