Electronic Supplementary Material (ESI) for Analytical Methods. This journal is © The Royal Society of Chemistry 2021

Combining prior knowledge with input selection algorithms for quantitative analysis by neural network in laser induced breakdown spectroscopy: Supplementary Materials

Danny Luarte, Ashwin Kumar Myakalwar, Marizu Velasquez, Jonnathan Alvarez, Claudio Sandoval, Rodrigo Fuentes, Jorge Yanez, and Daniel Sbarbaro

List of Figures

| S1 | Scores obtained using the KBest algorithm. The selection of a particular wavelength depends | |
|----|---|---|
| | on the higher number of scores and correlated with the LIBS library data(enlarged picture). | 2 |
| S2 | Cumulative variance explained using number of principal components. A total of 8 principal | |
| | components explain 99% of the variance cumulatively | 2 |
| S3 | Loadings plot of principal component analysis | 3 |
| S4 | Sum of weights obtained using CARS method | 3 |
| S5 | Sum of weights obtained using the LASSO regularization method | 4 |



Figure S1: Scores obtained using the KBest algorithm. The selection of a particular wavelength depends on the higher number of scores and correlated with the LIBS library data(enlarged picture).



Figure S2: Cumulative variance explained using number of principal components. A total of 8 principal components explain 99% of the variance cumulatively



Figure S3: Loadings plot of principal component analysis



Figure S4: Sum of weights obtained using CARS method



Figure S5: Sum of weights obtained using the LASSO regularization method