Estimating the higher heating value of solid fuel mixed biomass with plastic

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In this study, the method to estimate 1) the elementary composition ratio of the ingredients, 2) the method to estimate the HHV by using the mixing ratio of fuel, on the mixed solid fuel, are suggested, and the validity of estimated HHV was examined by the comparison with the HHV which was measured by experiments, using statistic parameters. The samples in which rice husks and sawdust are mixed with the organic waste materials in the ratio of 10 wt%, 30 wt%, 50 wt% respectively, are manufactured into pellet forms and used as the solid fuel. The average absolute error (AAE) and the average bias error (ABE) of the HHV estimated from KRE model which is suggested in this study, was 2.798 % and 0.515 % each and the correlation coefficient(R^2) was 0.999, and in case of the HHV estimating model by material composition ratio, the AAE, ABE and R^2 showed 1.792 %, 0.201 % and 1.000 each. Judging from this result, the method suggested in this study, is identified to have excellent proximity to the real measure value in wide range.