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Gasific: A Python Tool for Biomass Gasification Process

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Abstract

Biomass gasification and the production of syngas are important in the production of biohydrogen, a green fuel and an energy carrier for the fuel cell. The tool for the prediction of biohydrogen production from any biomass should be readily available to determine the viability of such biomass for gasification. The software implementing a robust gasification model is complex, proprietary, and expensive. In order to solve this problem, we developed Gasific, a software module for simple, free, and accurate biomass gasification product gas prediction. Gasific, implemented biomass gasification, stoichiometric equilibrium models, in Python and runs on a variety of platforms. We discussed the application of Gasific on biomass wastes, namely, *Imperata cylindrica*; the simulation shows good performance in predicting the gas composition product of gasification. The developed software and the code can be modified and applied to other scientific models and transform the models into software applications.

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