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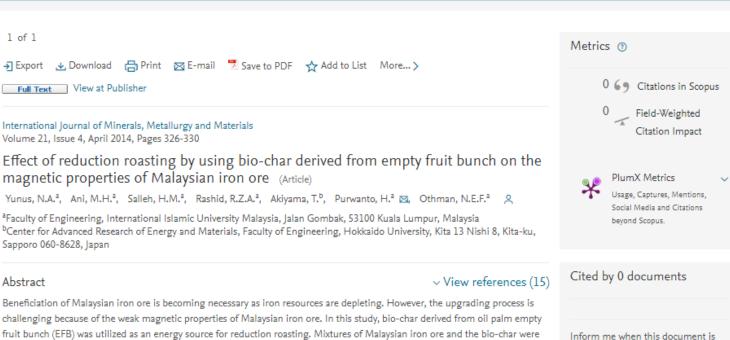
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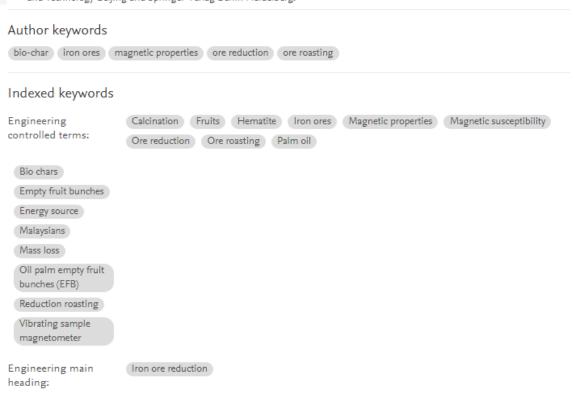
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fruit bunch (EFB) was utilized as an energy source for reduction roasting. Mixtures of Malaysian iron ore and the bio-char were pressed into briquettes and subjected to reduction roasting processes at 873-1173 K. The extent of reduction was estimated on the basis of mass loss, and the magnetization of samples was measured using a vibrating sample magnetometer (VSM). When reduced at 873 K, the original goethite-rich ore was converted into hematite. An increase in temperature to 1073 K caused a significant conversion of hematite into magnetite and enhanced the magnetic susceptibility and saturation magnetization of samples. The magnetic properties diminished at 1173 K as the iron ore was partially reduced to wustite. This reduction roasting by using the bio-char can assist in upgrading the iron ore by improving its magnetic properties. © 2014 University of Science and Technology Beijing and Springer-Verlag Berlin Heidelberg.



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