

Utilization of carbonized wood from tropical fast-growing trees for functional materials

Abstract

Establishment of fast-growing tree species plantations in tropical areas generate wood biomass residue in which some of them are currently utilized for heating fuel and some others are used for charcoal production with limited purposes. The development of functional materials for engineering applications utilizing carbonized wood from fast-growing trees species have to consider the microstructure and pore structure in carbonized wood which has a relationship to the carbonization conditions. This review covers the current researches on progress in the carbonization of wood from tropical fast-growing trees, mechanism of the microstructure and pore structure development in carbonized wood during carbonization, proper utilizations of the microstructure and porosity in carbonized wood for the development of functional materials and efforts and enhancing the development of functional materials using carbonized wood from tropical fast-growing trees.