

## **142o Influence of Heating Rate on Fine Structures of Japanese Cedar Chars**

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The chars prepared by carbonization of a woody biomass were studied by changing heating rates during its carbonization. The demineralization was performed on Japanese cedar, which was then immersed in Ferrocene (Fe) or Nikkerocene (Ni) solutions dissolved in methanol. The Japanese cedars containing metals of Fe or Ni, demineralized and raw Japanese cedars were carbonized respectively up to 1273K to prepare the chars in a high frequency dielectric-heating furnace under a flowing Ar atmosphere at a heating rate of 20 - 1800 K/min. The X-ray diffraction and nitrogen gas adsorption/desorption measurement were carried out to elucidate crystalline structures and fine pores present in the chars. It was found that the addition of metals developed the crystalline structures of carbons with increasing  $L_c$  and decreasing  $d_{002}$ , and that the micro- and meso-porosities in chars were also increased in the presence of metals. However, the extent to the change in carbon crystalline structure and porosities was affected by type of metals added and heating rate performed during carbonization.