



# Changes in surface properties of anthracite coal before and after inside/outside weathering processes

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**Abstract:** XPS, SEM and contact angle measurements were used to indicate the changes in surface properties of anthracite coal before and after inside/outside weathering processes. Weathering processes of anthracite coal were conducted on the roof and in the room respectively. XPS results showed that the content of C-C and C-H groups on the surface of anthracite coal was decreased after weathering processes while the content of C-O, C=O and O=C-O groups was increased. SEM results showed that the surface roughness of anthracite coal was increased after the weathering processes. Contact angle measurements showed that the contact angle of weathered coal was lower than that of fresh coal. Throughout this paper, it was found

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