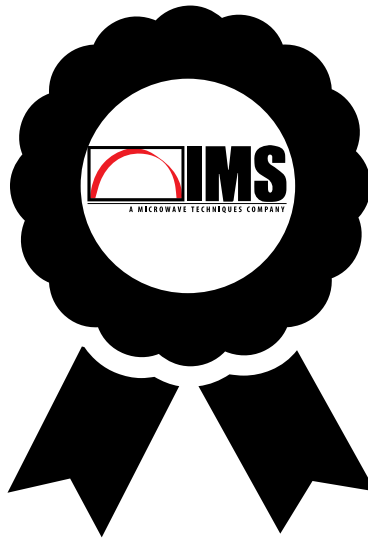


PATENT AWARD

U.S. Patent # 7666235B2 | Issued: February 23, 2010

Industrial Microwave Systems

A Microwave Techniques Company



Microwave Drying of Coal

A method for drying coal using microwave energy to achieve a controlled aggregate moisture content target range without starting combustion or degrading the coking qualities of the coal. Coal feed stock is first separated into fine grade coal and one or more larger grades. The fine grade coal is loaded onto a conveyor as a bed of fixed depth. The fine grade coal is conveyed continuously through a microwave-energized heating chamber for drying. The fine grade coal is dried sufficiently so that when it is combined with the larger grade coals, the moisture content of the aggregate is within a target moisture content range. By volumetrically and uniformly heating the coal, the microwave heating chamber boils away the water without heating the coal itself above about 90° C. In this way, the coal does not combust or oxidize, and its coking qualities are retained.