

عنوان مقاله:

Studying Relationship between Coal Intrinsic Characteristics in Spontaneous Combustion of Coal Potential Using Crossing Point Temperature Test Method

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خلاصه مقاله:

Spontaneous combustion of coal is one of the most horrifying hazards in coal industries, especially in underground coal mines. Thus having a prior knowledge about the occurrence of this phenomenon in underground coal mines is of crucial importance in preventing this process, loss of life, huge economic loss, and environmental pollution. The aim of this work is to determine the spontaneous combustion of coal potential in the Tabas Parvadeh coal mines in Iran in order to assess the effect of coal intrinsic characteristics on its occurrence. For the purpose of this investigation, the coal samples were collected from Parvadeh I to IV, and the coal intrinsic characteristics of the samples were tested. In order to determine the spontaneous combustion of coal propensity in this case study, the Crossing Point Temperature (CPT) test was used. Then the relation between the coal intrinsic characteristics and the CPT test values was determined. The results obtained showed that the B1 seam in Parvadeh II and C1 seam in Parvadeh III had a high potential of spontaneous combustion of coal potential. These results also show that an increase in the moisture, volatile matter, pyrite, vitrinite, and liptinite contents enhance the spontaneous combustion of coal tendency in these mines. The results obtained have major outcomes for the management of this phenomenon in the Tabas Parvadeh coal mines. Therefore, evaluation of the spontaneous combustion of coal hazards in coal mines should start in the first stage of design and carried on during their whole lifecycle, even after mine closure.

کلمات کلیدی:

Spontaneous Combustion of Coal, Tabas Parvadeh Coal Mines, Coal Intrinsic Characteristics, Crossing Point Temperature Test Method

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