Environmental Engineering and Management Journal *April 2019, Vol. 18, No. 4, 929-933*
http://www.eemj.icpm.tuiasi.ro/; http://www.eemj.eu

"Gheorghe Asachi" Technical University of Iasi, Romania

DETERMINATION OF COAL MICROELEMENTS BY INSTRUMENTAL ANALYSIS

Cristian Tomescu*, Cornel Boantă, Nicolae Ianc, Adrian Matei, Razvan Dragoescu

National Institute for Research and Development in Mine Safety and Protection to Explosion – INSEMEX Petroşani, 32-34 G-ral Vasile Milea Street, 332047 Petroşani, Romania

Abstract

In the mineral matter of coal there are microelements chemically bounded to organic matter or mineral impurities in various combinations that catalyzes the evolution / involution of a spontaneous combustion phenomenon as an accelerator in the oxidation reaction or which slows down these processes.
Specialised literature analyzes the phenomenon of coal self-heating based on several theories of which we exemplify the theory of coal oxidation, the theory of pyrite and the theory of the microelements role in the process of coal oxidation.
For the determination of these microelements in coal, the inductively coupled plasma atomic emission spectrometry method by means of which the mineral concentrations of hard coal and lignite samples were determined.
The present paper proposes to perform a comparative analysis of the results obtained by laboratory determinations on samples taken from various coal basins (Valea Jiului, Motru, Jilt, Rovinari, Berbesti).

Key words: coal, instrumentation, microelements, oxidation, tests

Received: September, 2018; Revised final: January, 2019; Accepted: April, 2019; Published in final edited form: April, 2019

* Author to whom all correspondence should be addressed: e-mail: cristian.tomescu@insemex.ro; Phone/ Fax: +40 254546277