

**MINERAL CHARACTERISTICS OF CARBONATES WITH TRACE  
ELEMENTS. PART 1. CALCITES**

YASUNORI MIURA<sup>1</sup>, TAKAO TANOSAKI<sup>2</sup>, OVIDIU GABRIEL IANCU<sup>3</sup>

<sup>1</sup>Inst. Earth Sciences, Graduate School of Science & Engineering, Yamaguchi  
University, Yoshida 1677-1, Yamaguchi, 753-8512, Japan

<sup>2</sup>Central Research Lab., Taiheiyo Cement Co. Ltd., Sakura, Japan

<sup>3</sup>„Al. I. Cuza” University of Iași, Department of Geology, 20A Carol I Blv.,  
700505 Iași, Romania

**Abstract**

Carbonate formation are discussed from all published mineral compositions and the X-ray fluorescence (XRF) analyses with contents of carbon and other foreign elements. New formation of metamorphic calcite minerals are discussed by these elements with the XRF data of present sea-shells, transparent calcite crystal and aragonite, and coloured calcites (grey, red and green) and marble-stones of European and Middle-East countries used for wall-stones. Mineral characteristics of these foreign elements of Na, Mg, Al, Si, P, S, Cl, K and Fe, replaced in Ca and C, in calcite-carbonates are considered to be new indicator of these formations at their circumstances (such as sea-floor or sea-surface, rocks of plate-tectonics or meteoritic metamorphism at the crustal rocks).

**Key words:** carbonates, calcite, marble-stones, carbon, trace elements, XRF analyses

---

<sup>1</sup> e-mail: yasmiura@yamaguchi-u.ac.jp