RawMat2021

www.rawmat2021.gr

International Conference on Raw Materials and Circular Economy

05-09 September 2021 | Athens

Divani Caravel Hotel

BOOK OF ABSTRACTS

Organized by

TEE TECHNICAL CHAMBER OF GREECE

SCHOOL OF MINING & METALLURGICAL ENGINEERING

GRawMat Innovation Cluster

under the auspices of

SEV Hellenic Federation of Enterprises

PLATINUM SPONSORS

ELVALHALCOR HELLENIC COPPER AND ALUMINIUM INDUSTRY S.A.

MYTILINEOS ALUMINIUM OF GREECE | METALLURGY BUSINESS UNIT

PROMETIA

TEE TECHNICAL CHAMBER OF GREECE

Monday 6 September 2021

VERGINA

SESSION A8

Advanced minerals exploration and characterization technologies II

Chair: F. Tinti, I. Kapageridis

Mapping bauxite mining residues using remote sensing techniques

S. Kasmaeeyazdi[1], F. Tinti[1], R. Braga[2], E. Mandanici[1]

[1]University of Bologna, Department DICAM, Italy
[2]University of Bologna, Department BIGEA, Italy

E-mail: sara.kasmaeeyazdi2@unibo.it

Bauxite residuals from abandoned mining sites are both an environmental challenge and possible source of secondary raw materials. Processing of multispectral and hyperspectral images with the best available techniques can help to produce multiscale spatial maps of elements inside and around the mining sites. Authors propose a procedure for mapping elements concentration using multiple data sets at different scale and resolution. A comparison between multispectral Sentinel-2 images and hyperspectral PRISMA processing is performed over some case studies of bauxite residues in Mediterranean area. Specifically, a case study from Italy is composed by artificial canyons created by past artisanal mining activities and by stockpiles of extracted bauxite. Hyperspectral punctual measurements (Spectroradiometer surveys) were taken in various zones of the bauxite site, where also in-field topsoil samples were taken for X-Ray fluorescence chemical analysis. A final concentration maps was estimated by performing geostatistical techniques.