**ΕΘΝΙΚΟ ΚΑΙ ΚΑΠΟΔΙΣΤΡΙΑΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ**

**ΤΜΗΜΑ ΓΕΩΛΟΓΙΑΣ ΚΑΙ ΓΕΩΠΕΡΙΒΑΛΛΟΝΤΟΣ**

**ΠΜΣ ΕΠΙΣΤΗΜΕΣ ΓΗΣ ΚΑΙ ΠΕΡΙΒΑΛΛΟΝ**

***Ειδίκευση "Ορυκτοί Πόροι - Πετρολογία και Διαχείριση Περιβάλλοντος"***

***"*** **ΟΠΠ-Ε10 ΜΕΤΑΛΛΟΓΕΝΕΣΗ ΕΛΛΑΔΑΣ ΚΑΙ ΕΥΡΩΠΗΣ ΚΑΙ ΟΡΥΚΤΕΣ ΠΡΩΤΕΣ ΥΛΕΣ ΚΡΙΣΙΜΗΣ ΣΗΜΑΣΙΑΣ ΣΤΗΝ ΕΕ*"***

***Essay***

ΘΕΜΑ

***“Rare Earth Elements (REEs) in Ore Deposits: Global “status quo” and, REE resource potential in Europe and Greece”***

* *Uses*
* *Distribution*
* *Metallogenetic provinces*
* *Geodynamic/Geologic setting*
* *Mineralogy*
* *Genesis*
* *Production*

Literature

*ΘΕΜΑ 1*

**EUROPE**

1. Girtan, M.; Wittenberg, A.; Grilli, M.L.; de Oliveira, D.P.S.; Giosuè, C.; Ruello, M.L. The Critical Raw Materials Issue between Scarcity, Supply Risk, and Unique Properties. Materials **2021**, 14, 1826. https://doi.org/10.3390/ma14081826
2. Wittenberg et al. (**2021**) GeoERA Raw Materials to support Europe’s resilience on raw materials. Society for Geology Applied to Mineral Deposits (SGA) News March 2021, pp. 6-10.
3. Goodenough, K.M., Schilling, J., Jonsson, E., Kalvig, P., Charles, N., Tuduri, J., Deady, E.A., Sadeghi, M., Schiellerup, H., Müller, A. and Bertrand, G., **2016**. Europe's rare earth element resource potential: An overview of REE metallogenetic provinces and their geodynamic setting. Ore Geology Reviews, 72, pp.838-856.
4. Dushyantha, N., Batapola, N., Ilankoon, I.M.S.K., Rohitha, S., Premasiri, R., Abeysinghe, B., Ratnayake, N. and Dissanayake, K., **2020**. The story of rare earth elements (REEs): Occurrences, global distribution, genesis, geology, mineralogy and global production. Ore Geology Reviews, 122, p.103521.
5. Sadeghi, M., Arvanitidis, N. and Ladenberger, A., **2020**. Geochemistry of Rare Earth Elements in Bedrock and Till, Applied in the Context of Mineral Potential in Sweden. Minerals, 10(4), p.365.
6. Sahlström, F., Jonsson, E., Högdahl, K., Troll, V.R., Harris, C., Jolis, E.M. and Weis, F., **2019**. Interaction between high-temperature magmatic fluids and limestone explains ‘Bastnäs-type’ REE deposits in central Sweden. Scientific reports, 9(1), pp.1-9.

**GREECE**

1. Papadopoulos, A., Tzifas, I.T. and Tsikos, H., **2019**. The potential for REE and associated critical metals in coastal sand (placer) deposits of Greece: A review. Minerals, 9(8), p.469.