LATE MESOZOIC INTRUSIVES AND THEIR NATURE IN THE EVOLUTION OF EASTERN EUROPE: STRANDJA MASSIF, NW TURKEY

EZGI ULUSOY[1] AND YUSUF KAGAN KADIOGLU[2,3]

[1] General Directorate of Mineral Researchand Exploration, Department of Geological Research, ANKARA
[2] Ankara University, Engineering Faculty, Geological Engineering Department, ANKARA
[3] Earth Science Application and Research Centre of Ankara University (YEBİM), ANKARA

Convergence relation between Africa and Laurassia during Mesozoic to Tertiary times generated an extensive magmatic arc named as Apuseni-Bant-Timok-Srednogorie belt. Late Mesozoic intrusives within Strandja Massif outcropped around NW Turkey is belong to eastern edge of Srednogorie magmatic arc. The intrusives of this arc show variation in composition and they cut various rocks of Strandja Massif rocks with sharp contact. Main rock groups of this arc in Turkish part divided into four subgroup: (I) granitic rocks, (II) monzonitic rock, (III) syenitic rocks and (IV) gabbroic rocks. Granitoids with SiO_2 range between 57-72% are calcalkalen, metaluminous and intermediate K in character. $^{39}Ar/^{40}Ar$ amphibole age from granite is 79.46±1.40 Ma. Monzonites with SiO_2 range between 50-64% are metaluminous and transition between calcalkaline high K with shoshonitic in character Different from first two groups, syenites have alkaline character with SiO_2 range between 59-63% and aluminium saturation index ploted border of metaluminous and peralkalin transition. The forth and last rock group composed of gabbroic rocks with 42-52% SiO_2 range. While all rock groups show regular positive correlation SiO_2 versus NaO_2 and K_2O, Rb, Ba values, regular and/or relatively negative correlation SiO_2 vs MgO, CaO, MnO, TiO_2, Sr, Ta, Y. Chondrite normalized rare earth elemental patterns show enrichment in light rare earth elements (LREE) and relatively depletion heavy rare elements (HREE). Tectonic discrimination diagrams of these rocks plots on the volcanic arc region. In conclusion, according to geochemical data H - type Late Cretaceous magmas may be derived from mafic magma which was modified with slab-derived fluids and crustal components.