

NATIONAL UNION of GEODESY and GEOPHYSICS of TURKEY

**The Report of
COMMISSION of VOLCANOLOGY and CHEMISTRY
of the
EARTH'S INTERIOR**

Prepared by : TAVCEI (TUVAK)

**to be presented at the
XXIV. GENERAL ASSEMBLY
of the
INTERNATIONAL UNION of GEODESY and GEOPHYSICS
July 2007**

INTRODUCTION

The Turkish National Commission for Volcanology and Chemistry of the Earth's Interior (TAVCEI) had continued his work in the period between 2003-2006 on the coordination of the scientific studies on magmatology and geochemistry in Turkey.

The commission is sponsored and supported by the General Directorate of Mineral Research and Exploration (MTA), which corresponds to the Geological Survey in many countries. MTA not only provides the secretarial support but also the web-page of the Commission. The scientific efforts of the Commission are flanked by a considerable number of scientists from the Geology Departments of the leading Universities such as İstanbul Univ., İstanbul Technical Univ., Black Sea Univ., Selçuk Univ., Middle East Technical Univ., Hacettepe Univ., 9 Eylül Univ., Çukurova Univ. etc. From these about 100 scientists are actively involved in the sub-commissions and committees. A group of graduate students and young scientists are also implicated in the activities.

The main goal of the Commission is to coordinate the studies and realize databases on the geochemical analyses and geochronological age data on igneous rocks. Moreover it systematically collects the published documents on related topics and transfers information on IAVCEI-related topics via its mail-group and web-page.

Further goals of the Commission are

- 1- to organize courses, summer-schools, work-shops, symposia and congresses on related topics,
- 2- to inform the public on the volcanogenic hazards
- 3- to provide basic knowledge on the igneous processes in the Earths interior within the framework of popular science.
- 4- to coordinate the multi-disciplinal studies

The Sub-Commissions and Working Groups of TAVCEI are structured according to the popular issues in the country and include:

- 1- SC of Volcanology and Geothermal Energy
- 2- SC of Geochemistry
 - a- WG on Granitoids
 - b- WG on Ophiolites
 - c- WG on Alkaline magmatism
- 3- Isotope Geochemistry and Geochronology
 - a- WG for Data Bank of radiometric ages of plutonic rocks
 - b- WG for Data Bank of radiometric ages of volcanic rocks
- 4- Pyroclastic Deposits
- 5- Igneous Mineral Deposits
- 6- Data Bank on Geochemistry

- 7- Geological Heritage and Natural Monuments of igneous origin
- 8- Igneous Terminology in Turkish
- 9- WG for TAVCEI-Bulleten
- 10- WG for Documentation

In the following the Commission reports its activities and a list of related publications in the 2003-2006 interval.

Further activities of the TAVCEI can be seen on the following web-address of the Commission: **<http://www.mta.gov.tr/tuvak>**

PUBLICATIONS

1. Westaway R., Pringle M., Yurtmen S., Demir T., Bridgland D., Rowbotham G., and Maddy D., 2004. Pliocene and Quaternary regional uplift in western Turkey: the Gediz River terrace staircase and the volcanism at Kula. *Tectonophysics*, Volume 391, Issues 1-4, 2, Pages 121-169.
2. Ferre, E.C., Zechmeister, M., Geissman, J., Mathana, Sekaran N. ve Koçak, K., 2005, 'The origin of high magnetic remanence in fault pseudotachylites: theoretical considerations and implications for co-seismic electrical currents'. *Tectonophysics*, 402, 125-39.
3. Rimmelé G., Parra T., Goffé B., Oberhänsli R., Jolivet L. and Candan O., 2005. Exhumation Paths of High-Pressure–Low-Temperature Metamorphic Rocks from the Lycian Nappes and the Menderes Massif (SW Turkey): a Multi-Equilibrium Approach. *J. Petrology*, 46: 641 - 669.
4. Topuz G., Altherr R., Schwarz W.H., Siebel W., Satır M. and Dokuz, A. 2005. Post-collisional plutonism with adakite-like signatures: the Eocene Saraycık granodiorite (Eastern Pontides, Turkey). *Contributions to Mineralogy and Petrology*, Volume 150, Number 4.
5. Karsli O., Chen B., Aydin F. and Şen C., 2007. Geochemical and Sr–Nd–Pb isotopic compositions of the Eocene Dölek and Sariçiçek Plutons, Eastern Turkey: Implications for magma interaction in the genesis of high-K calc-alkaline granitoids in a post-collision extensional setting. *Lithos*, Article in Press, Corrected Proof.
6. Boztuğ D., Harlavan Y., Arehart G.B., Satır M. and Avcı N., 2006. K–Ar age, whole-rock and isotope geochemistry of A-type granitoids in the Divriği–Sivas region, eastern-central Anatolia, Turkey. *Lithos*, Article in Press, Corrected Proof.
7. Çoban H. and Flower M.F.J., 2006. Mineral phase compositions in silica-undersaturated 'leucite' lamproites from the Bucak area, Isparta, SW Turkey. *Lithos*, Volume 89, Issues 3-4, Pages 275-299.
8. Aldanmaz E., Köprübaşı N., Gürer Ö.F., Kaymakçı N. and Gourgaud A., 2006. Geochemical constraints on the Cenozoic, OIB-type alkaline volcanic rocks of

- NW Turkey: Implications for mantle sources and melting processes. *Lithos*, Volume 86, Issues 1-2, Pages 50-76.
9. Candan O., Çetinkaplan M., Oberhänsli R., Rimmelé G. and Akal C., 2005. Alpine high-P/low-T metamorphism of the Afyon Zone and implications for the metamorphic evolution of Western Anatolia, Turkey. *Lithos*, Volume 84, Issues 1-2, Pages 102-124.
 10. Ilbeyli N., Pearce J. A., Thirlwall M. F. and Mitchell J. G., 2004. Petrogenesis of collision-related plutonics in Central Anatolia Turkey. *Lithos*, Volume 72, Issues 3-4, Pages 163-182
 11. Topuz G., Rainer Altherr R., Angelika Kalt, Muharrem Satır, Olaf Werner and Winfried H. Schwarz, 2004. Aluminous granulites from the Pulur complex, NE Turkey: a case of partial melting, efficient melt extraction and crystallisation. *Lithos*, Volume 72, Issues 3-4, pages 183-207
 12. Rimmelé G., Oberhänsli R., Goffé B., Jolivet L., Candan O. and Çetinkaplan M., 2003. First evidence of high-pressure metamorphism in the “Cover Series” of the southern Menderes Massif. Tectonic and metamorphic implications for the evolution of SW Turkey. *Lithos*, Volume 71, Issue 1, pages 19-46
 13. Özdemir Y., Karaoğlu Ö., Tolluoğlu A.Ü. and Güleç N., 2006. Volcanostratigraphy and petrogenesis of the Nemrut stratovolcano (East Anatolian High Plateau): The most recent post-collisional volcanism in Turkey. *Chemical Geology*, Volume 226, Issues 3-4, pages 189-211
 14. Karsli O., 2007. Pre-eruptive conditions revealed by mega- and pheno-cryst compositions from the Quaternary Erzincan Volcanics, Eastern Turkey: Insights into the magma processes *Chemie der Erde - Geochemistry*, Volume 66, Issue 4, pages 277-305.
 15. Kurt H., Asan K. and Ruffet G., 2006. The relationship between collision-related calcalkaline, and within-plate alkaline volcanism in the Karacadağ Area (Konya-Türkiye, Central Anatolia). *Chemie der Erde - Geochemistry*, In Press, Corrected Proof, Available online 11 July 2006.
 16. Ekici T., Alpaslan M., Parlak O. and Temel A., 2006. Geochemistry of the Pliocene basalts erupted along the Malatya-Ovacik fault zone (MOFZ), eastern Anatolia, Turkey: Implications for source characteristics and partial melting

processes. *Chemie der Erde - Geochemistry*, In Press, Corrected Proof, Available online 17 February 2006.

17. Yilmaz Şahin A., 2005. Geochemistry of mafic microgranular enclaves in the Tamdere Quartz Monzonite, south of Dereli/Giresun, Eastern Pontides, Turkey *Chemie der Erde Geochemistry*, In Press, Corrected Proof, Available online 19 September 2005.
18. Öner F., Alpaslan M., Boztuğ, D. and Kuşçu M., 2005. Geochemie und Petrogenese der Intrusivgesteine von Ağören in Ostanatolien/Türkei *Chemie der Erde - Geochemistry*, In Press, Corrected Proof, Available online 8 September 2005.
19. Akçay M. and Gündüz Ö., 2004. Porphyry Cu–Au mineralisation associated with a multi-phase intrusion, and related replacement fronts in limestones in an island arc setting near the Gümüşhane village (Artvin) in the Eastern Black Sea Province (Turkey). *Chemie der Erde - Geochemistry*, Volume 64, Issue 4, pages 359-383.
20. Karsli O., Aydin F. and Sadiklar M. B., 2004. The morphology and chemistry of K-feldspar megacrysts from İkizdere Pluton: evidence for acid and basic magma interactions in granitoid rocks, NE–Turkey. *Chemie der Erde Geochemistry*, Volume 64, Issue 2, pages 155-170.
21. Uras Y., Öner, F. and Yaman S., 2003. Geochemie des Fluoritvorkommens von Feke (Adana-Türkei) im Osten des Taurusgebirges: Geochemistry of fluorite occurrence from Feke (Adana-Turkey) in the East Taurid Mountains, *Chemie der Erde - Geochemistry*, Volume 63, Issue 1, Pages 55-62
22. Altunkaynak S., 2006. Post-collisional granitic magmatism via slab breakoff in the Eocene NW Anatolia, Turkey, *Geochimica et Cosmochimica Acta*, Volume 70, Issue 18, Supplement 1, page A12
23. Sipahi F. and Sadiklar M.B., 2006, Discrimination of dacites with trace elements (Zigana, NE-Turkey), *Geochimica et Cosmochimica Acta*, Volume 70, Issue 18, Supplement 1, page A593
24. Temur S. and Ercan Y., 2006. Geochemistry of the Sarıkaya ferrous manganese deposit (Yozgat, Turkey), *Geochimica et Cosmochimica Acta*, Volume 70, Issue 18, Supplement 1, page A643

25. Boztuğ D. and Arehart G.B., 2007. Oxygen and sulfur isotope geochemistry revealing a significant crustal signature in the genesis of the post-collisional granitoids in Central Anatolia, Turkey *Journal of Asian Earth Sciences*, Volume 30, Issue 2, pages 403-416
26. Gökce A. and Bozkaya G., 2007. Lead and sulfur isotopic studies of the barite–galena deposits in the Karalar area (Gazipaşa–Antalya), Southern Turkey, *Journal of Asian Earth Sciences*, Volume 30, Issue 1, Pages 53-62
27. Varol E., Temel A., Gourgaud A. and Bellon H., 2007. Early Miocene ‘adakite-like’ volcanism in the Balkuyumcu region, central Anatolia, Turkey: petrology and geochemistry, *Journal of Asian Earth Sciences*, In Press, Accepted Manuscript, Available online 30 March 2007
28. Aydoğan M.S., İlbeyli N., Çoban H., Akıncı Ö., Bozcu M. and Kuşcu M., 2007. Geochemical and isotopic (Nd, Sr) constraints on the petrogenesis of Baklan Granite in southern part of the Muratdağı Region (Banaz, Uşak), western Anatolia (Turkey), *Journal of Asian Earth Sciences*, In Press, Accepted Manuscript, Available online 21 February
29. Çoban H. and Flower M. F.J., 2007. Late Pliocene lamproites from Bucak, Isparta (southwestern Turkey): Implications for mantle ‘wedge’ evolution during Africa-Anatolian plate convergence, *Journal of Asian Earth Sciences*, Volume 29, Issue 1, Pages 160-176
30. Alpaslan M., Boztuğ D., Frei R., Temel A. and Kurt M.A., 2006. Geochemical and Pb–Sr–Nd isotopic composition of the ultrapotassic volcanic rocks from the extension-related Çamardı-Ulukışla basin, Niğde Province, Central Anatolia, Turkey, *Journal of Asian Earth Sciences*, Volume 27, Issue 5, Pages 613-627
31. Kumral M., Coban H., Gedikoglu A. and Kilinc A., 2006. Petrology and geochemistry of augite trachytes and porphyritic trachytes from the Gölcük volcanic region, Isparta, SW Turkey: A case study, *Journal of Asian Earth Sciences*, Volume 27, Issue 5, Pages 707-716
32. Boztuğ D., Erçin A.İ., Kuruçelik M.K., Göç D., Kömür İ. and İskenderoğlu A., 2006. Geochemical characteristics of the composite Kaçkar batholith generated in a Neo-Tethyan convergence system, Eastern Pontides, Turkey, *Journal of Asian Earth Sciences*, Volume 27, Issue 3, Pages 286-302

33. Ali Yılmaz and Hüseyin Yılmaz, 2006. Characteristic features and structural evolution of a post collisional basin: The Sivas Basin, Central Anatolia, Turkey, *Journal of Asian Earth Sciences*, Volume 27, Issue 2, July 2006, pages 164-176
34. Arslan M. and Aslan Z., 2006. Mineralogy, petrography and whole-rock geochemistry of the Tertiary granitic intrusions in the Eastern Pontides, Turkey, *Journal of Asian Earth Sciences*, Volume 27, Issue 2, pages 177-193
35. Çelik Ö.F. and Delaloye M. F., 2006. Characteristics of ophiolite-related metamorphic rocks in the Beysehir ophiolitic mélange (Central Taurides, Turkey), deduced from whole rock and mineral chemistry, *Journal of Asian Earth Sciences*, Volume 26, Issue 5, pages 461-476
36. Gökçe A. and Bozkaya G., 2006. Lead and sulfur isotope evidence for the origin of the Inler Yaylası lead–zinc deposits, Northern Turkey, *Journal of Asian Earth Sciences*, Volume 26, Issue 1, pages 91-97
37. Kocak K., Isık F., Arslan M and Zedef V., 2005. Petrological and source region characteristics of ophiolitic hornblende gabbros from the Aksaray and Kayseri regions, central Anatolian crystalline complex, Turkey, *Journal of Asian Earth Sciences*, Volume 25, Issue 6, pages 883-891
38. Orgün Y., Gültekin A.H. and Onal A., 2005. Geology, mineralogy and fluid inclusion data from the Arapucan Pb–Zn–Cu–Ag deposit, Canakkale, Turkey, *Journal of Asian Earth Sciences*, Volume 25, Issue 4, pages 629-642
39. Koptagel O., Ulusoy U. and Efe A., 2005. A study of sulfur isotopes in determining the genesis of Goynuk and Celaldagi Desandre Pb–Zn deposits, eastern Yahyali, Kayseri, Central Turkey, *Journal of Asian Earth Sciences*, Volume 25, Issue 2, pages 279-289
40. Sasmaz A., Yavuz F., Sagiroglu A. and Akgul B., 2005. Geochemical patterns of the Akdagmadeni (Yozgat, Central Turkey) fluorite deposits and implications, *Journal of Asian Earth Sciences*, Volume 24, Issue 4, pages 469-479
41. Kuscu İ., Gencalioglu-Kuscu G., Sarac C. and Meinert L. D., 2004. An approach to geochemical characterization of productive versus barren granitoids in terms of iron in Central Turkey, *Journal of Asian Earth Sciences*, Volume 24, Issue 3, pages 311-325

42. Bölücek C., Akgül M. and Türkmen İ., 2004. Volcanism, sedimentation and massive sulfide mineralization in a Late Cretaceous arc-related basin, Eastern Taurides, Turkey, *Journal of Asian Earth Sciences*, Volume 24, Issue 3, pages 349-360
43. Akay E. and Erdoğan B., 2004. Evolution of Neogene calc-alkaline to alkaline volcanism in the Aliğa-Foça region (Western Anatolia, Turkey), *Journal of Asian Earth Sciences*, Volume 24, Issue 3, pages 367-387
44. Manav H., Gültekin A. H. and Uz B., 2004. Geochemical evidence for the tectonic setting of the Harmancik ophiolites, NW Turkey, *Journal of Asian Earth Sciences*, Volume 24, Issue 1, pages 1-9
45. Sagirolu A. and Sasmaz A., 2004. Mineralogy and geochemistry of the argentiferous Pb–Zn and Cu veins of the Çolaklı area, Elazığ, Eastern Turkey *Journal of Asian Earth Sciences*, Volume 23, Issue 1, pages 37-45
46. Demirel Z., Yildirim T. and Burçak M., 2004. Preliminary study on the occurrence of geothermal systems in the tectonic compressional regions: an example from the Derman geothermal field in the Biga Peninsula, Turkey, *Journal of Asian Earth Sciences*, Volume 22, Issue 5, pages 495-501
47. Genç Ş. C., 2004. A Triassic large igneous province in the Pontides, northern Turkey: geochemical data for its tectonic setting, *Journal of Asian Earth Sciences*, Volume 22, Issue 5, pages 503-516
48. Isik V., Tekeli O. and Seyitoglu G., 2004. The $^{40}\text{Ar}/^{39}\text{Ar}$ age of extensional ductile deformation and granitoid intrusion in the northern Menderes core complex: implications for the initiation of extensional tectonics in western Turkey, *Journal of Asian Earth Sciences*, Volume 23, Issue 4, pages 555-566.
49. Altunbey M. and Sagirolu A., 2003. Skarn-type ilmenite mineralization of the Tuzbai–Tunceli region, eastern Turkey, *Journal of Asian Earth Sciences*, Volume 21, Issue 5, pages 481-488.
50. Gültekin A.H., Örgün Y. and Suner F., 2003. Geology, mineralogy and fluid inclusion data of the Kizilcaören fluorite–barite–REE deposit, Eskisehir, Turkey, *Journal of Asian Earth Sciences*, Volume 21, Issue 4, pages 365-376.

51. Karakaya N., Karakaya M.Ç., Nalbantçılar M.T. and Yavuz F., 2007. Relation between spring-water chemistry and hydrothermal alteration in the Şaplıca volcanic rocks, Şebinkarahisar (Giresun, Turkey), *Journal of Geochemical Exploration*, Volume 93, Issue 1, pages 35-46
52. Çiftçi E., Kolaylı H. and Tokel S., 2005. Lead-arsenic soil geochemical study as an exploration guide over the Killik volcanogenic massive sulfide deposit, Northeastern Turkey, *Journal of Geochemical Exploration*, Volume 86, Issue 1, pages 49-59
53. Yılmaz H., 2003. Geochemical exploration for gold in western Turkey: success and failure, *Journal of Geochemical Exploration*, Volume 80, Issue 1, pages 117-135
54. Yılmaz H., 2003. Exploration at the Kusçayırı Au (Cu) prospect and its implications for porphyry-related mineralization in western Turkey, *Journal of Geochemical Exploration*, Volume 77, Issues 2-3, March 2003, Pages 133-150
55. Degryse P., Muchez, Six S. and Waelkens M., 2003. Identification of ore extraction and metal working in ancient times: a case study of Sagalassos (SW Turkey), *Journal of Geochemical Exploration*, Volume 77, Issue 1, pages 65-80
56. Gençlioğlu-Kuşcu G., Atilla C., Cas R. A.F. and İlkay Kuşcu İ., 2007. Base surge deposits, eruption history, and depositional processes of a wet phreatomagmatic volcano in Central Anatolia (Cora Maar), *Journal of Volcanology and Geothermal Research*, Volume 159, Issues 1-3, 1, pages 198-209.
57. Holness M. B. And Bunbury J. M., 2006. Insights into continental rift-related magma chambers: Cognate nodules from the Kula Volcanic Province, Western Turkey, *Journal of Volcanology and Geothermal Research*, Volume 153, Issues 3-4, pages 241-261
58. Erkül F., Helvacı C. and Sözbilir H., 2006. Olivine basalt and trachyandesite peperites formed at the subsurface/surface interface of a semi-arid lake: An example from the Early Miocene Bigadiç basin, western Turkey, *Journal of Volcanology and Geothermal Research*, Volume 149, Issues 3-4, pages 240-262

59. Tarcan G., 2005. Mineral saturation and scaling tendencies of waters discharged from wells (>150 şC) in geothermal areas of Turkey, *Journal of Volcanology and Geothermal Research*, Volume 142, Issues 3-4, 15 April 2005, Pages 263-283
60. Le Pennec J. L. , Temel A., Froger J.-L., Sen S., Gourgaud A. and Bourdier J.-L., 2005. Stratigraphy and age of the Cappadocia ignimbrites, Turkey: reconciling field constraints with paleontologic, radiochronologic, geochemical and paleomagnetic data, *Journal of Volcanology and Geothermal Research*, Volume 141, Issues 1-2, 1 March 2005, Pages 45-64
61. Ulusoy I., Cubukcu E., Aydar E., Labazuy P., Gourgaud A. and Vincent P. M., 2004. Volcanic and deformation history of the Bodrum resurgent caldera system (southwestern Turkey), *Journal of Volcanology and Geothermal Research*, Volume 136, Issues 1-2, pages 71-96
62. Çağlar İ. and İşseven T., 2004. Two-dimensional geoelectrical structure of the Göynük geothermal area, northwest Anatolia, Turkey, *Journal of Volcanology and Geothermal Research*, Volume 134, Issue 3, pages 183-19
63. Tarcan G. and Gemici Ü., 2003. Water geochemistry of the Seferihisar geothermal area, İzmir, Turkey, *Journal of Volcanology and Geothermal Research*, Volume 126, Issues 3-4, pages 225-242
64. Şen E., Kürkcüoğlu B., Aydar E., Gourgaud A. and Vincent P.M., 2003. Volcanological evolution of Mount Erciyes stratovolcano and origin of the Valibaba Tepe ignimbrite (Central Anatolia, Turkey), *Journal of Volcanology and Geothermal Research*, Volume 125, Issues 3-4, pages 225-246
65. Aydar E., Gourgaud A., Ulusoy I., Digonnet F., Labazuy P., Sen E., Bayhan H., Kurttas T. And Tolluoglu A.U., 2003. Morphological analysis of active Mount Nemrut stratovolcano, eastern Turkey: evidences and possible impact areas of future eruption, *Journal of Volcanology and Geothermal Research*, Volume 123, Issues 3-4, pages 301-312
66. Kuşcu I., 2007. Discussion on “Gold in Turkey — A missing link in Tethyan metallogeny”, *Ore Geology Reviews*, Volume 30, Issue 2, February 2007, Pages 135-140

67. Yigit O., 2007. "Gold in Turkey — A missing link in Tethyan metallogeny" [Ore Geology Reviews 28, 147–179] — Reply, Ore Geology Reviews, Volume 30, Issue 2, February 2007, Pages 141-142
68. Yilmaz H., Oyman T., Arehart G.B., Colakoglu A.R. and Billor Z., 2007. Low-sulfidation type Au–Ag mineralization at Bergama, Izmir, Turkey, Ore Geology Reviews, In Press, Corrected Proof, Available online 10 January 2007
69. Genç Y., 2006. Genesis of the Neogene interstratal karst-type Pöhrenk fluorite–barite (\pm lead) deposit (Kırşehir, Central Anatolia, Turkey), Ore Geology Reviews, Volume 29, Issue 2, August 2006, Pages 105-117
70. Akçay M., Özkan H.M., Moon C.J. and Spiro B., 2006. Geology, mineralogy and geochemistry of the gold-bearing stibnite and cinnabar deposits in the Emirli and Halıköy areas (Ödemiş, İzmir, West Turkey), Ore Geology Reviews, Volume 29, Issue 1, July 2006, Pages 19-51
71. Karakaya M. Ç., 2006. "Geochemistry and origin of the Şaphane alunite deposit, western Anatolia, Turkey" [Ore Geology Reviews 26 (2005), 39–50] — A discussion, Ore Geology Reviews, Volume 28, Issue 2, pages 250-254
72. Mutlu H., Sariiz K. and Kadir S., 2006. "Geochemistry and origin of the Şaphane alunite deposit, western Anatolia, Turkey" [Ore Geology Reviews 26 (2005), 39–50] — reply, Ore Geology Reviews, Volume 28, Issue 2, pages 255-258
73. Oyman T., Minareci F. and Pişkin Ö., 2003. Efemçukuru B-rich epithermal gold deposit (İzmir, Turkey), Ore Geology Reviews, Volume 23, Issues 1-2, pages 35-53
74. Goncuoglu M.C., Yaliniz M.K. and Tekin U. K., 2006. Geochemistry, tectonomagmatic discrimination and Radiolarian ages of basic extrusives within the Izmir-Ankara Suture Belt (NW Turkey): time constraints for the Neotethyan evolution. *Ofioliti*, 31(1): 25-38.
75. Vergili Ö. and Parlak P., 2005. Geochemistry and tectonic setting of metamorphic sole rocks and mafic dikes from the Pinarbai (Kayseri) Ophioliti, Central Anatolia (Turkey), *Ofioliti*, 30(1): 37-52

76. Zedef V., Doyen A., Oncel M.S., Sogut A.R., Koseleli T. and Kocak K., 2004. Chemical and physical properties of the Kizildağ olivines. A giant olivine deposit, Antalya, SW Turkey. *Ofioliti*, 29(2): 243-246.
77. Ustaömer P. A., Mundil R., Renne P.R., 2005. U/Pb and Pb/Pb zircon ages for arc-related intrusions of the Bolu Massif (W Pontides, NW Turkey): evidence for Late Precambrian (Cadomian) age, *Terra Nova* 17 (3), 215–223.
78. Yilmaz-Şahin S., 2005. Transition from arc- to post-collision extensional setting revealed by K-Ar dating and petrology: an example from the granitoids of the Eastern Pontide Igneous Terrane, Araklı-Trabzon, NE Turkey, *Geological Journal* 40:4, 425
79. Akbulut M., Pişkin Ö., Karayiğit A.İ., 2006. The genesis of the carbonatized and silicified ultramafics known as listvenites: a case study from the Mihaliççık region (Eskişehir), NW Turkey, *Geological Journal*, Volume 41, Issue 5 , Pages 557 – 580
80. Çakir U., Genç Y., Paktunç D., 2006. Intrusive Iherzolites within the basalts of Küre ophiolite (Turkey): an occurrence in the Tethyan suprasubduction marginal basin, *Geological Journal*, Volume 41, Issue 2, Pages: 123-143
81. Karacik Z., 2006. Stratigraphy and volcanology of the Türkbükü volcanics: products of a stratovolcano in the Bodrum Peninsula, SW Anatolia, *Geological Journal*, Volume 41, Issue 2, Date: April 2006, Pages: 145-162
82. Bağcı U., Parlak O., Höck V., 2006. Geochemical character and tectonic environment of ultramafic to mafic cumulate rocks from the Tekirova (Antalya) ophiolite (southern Turkey), *Geological Journal*, Volume 41, Issue 2, Pages: 193-219
83. Tatar S., Boztuğ D., 2005. The syn-collisional Danaciobası biotite leucogranite derived from the crustal thickening in central Anatolia (Kırıkkale), Turkey, *Geological Journal*, Volume 40, Issue 5, Pages: 571-591
84. Erkül F., Helvacı C., Sözbilir H., 2005. Evidence for two episodes of volcanism in the Bigadiç borate basin and tectonic implications for western Turkey, *Geological Journal*, Volume 40, Issue 5, Pages: 545-570
85. Önal A., Boztuğ D., Kürüm S., Harlavan Y., Arehart G. B., Arslan M., 2005. K-Ar

- age determination, whole-rock and oxygen isotope geochemistry of the post-collisional Bizmişen and Çaltı plutons, SW Erzincan, eastern Central Anatolia, Turkey, *Geological Journal*, Volume 40, Issue 4, Pages: 457-476
86. Yılmaz-Şahin S., 2005. Transition from arc- to post-collision extensional setting revealed by K-Ar dating and petrology: an example from the granitoids of the Eastern Pontide Igneous Terrane, Araklı-Trabzon, NE Turkey, *Geological Journal*, Volume 40, Issue 4, Pages: 425-440
 87. Alpaslan M., Ekici T., Otlu N., Boztug D., Temel A., 2005. Magmatic processes and mixing origin of andesite: Miocene Karamağara volcanics, Central Anatolia, Turkey, *Geological Journal*, Volume 40, Issue 2, Pages: 193-214
 88. Koçyiğit A., Winchester J. A., Bozkurt E., Holland G., 2003. Saraçköy Volcanic Suite: implications for the subductional phase of arc evolution in the Galatean Arc Complex, Ankara, Turkey, *Geological Journal*, Volume 38, Issue 1, Date: January/March 2003, Pages: 1-14
 89. Uysal I., Sadiklar M. B., Tarkian M., Karsli O. and Aydin F., 2005. Mineralogy and composition of the chromitites and their platinum-group minerals from Ortaca (Mugla-SW Turkey): evidence for ophiolitic chromitite genesis, *Mineralogy and Petrology*, Volume 83, Numbers 3-4, pages. 219-242
 90. Topuz G. and Altherr R., 2004. Pervasive rehydration of granulites during exhumation - an example from the Pulus complex, Eastern Pontides, *Mineralogy and Petrology*, Turkey, Volume 81, Numbers 1-2, pages. 165-85.
 91. Aydin, F., Karsli, O. & Sadiklar, M.B., 2003. Mineralogy and Chemistry of Biotites from the Eastern Pontide Granitoid Rocks: Some Petrological Implications for Granitoid Magmas: *Chemie der Erde-Geochemistry*, 63, 163-182.
 92. Karsli, O., Aydin, F. & Sadiklar, M.B., 2003. The Morphology and Chemistry of K-Feldspar Megacrysts from İkizdere Plüton: Evidence for Acid and Basic Magma Interactions in Granitoid Rocks, NE-Turkey: *Chemie der Erde-Geochemistry* 64, 155-170.
 93. Karsli, O., Aydin, F. & Sadiklar, M.B., 2004. Magma interaction Recorded in Plagioclase Zoning in Granitoidic Systems, Zigana Granitoid, NE-Turkey. *Turkish Journal of Earth Science*, 13, 1-27.

94. Koçak, K., Işık, F., Arslan, M. ve Zedef, V., 2005. " Petrological and source region characteristics of ophiolitic hornblende gabbros from the Aksaray and Kayseri regions, Central Anatolian Crystalline complex, Turkey", Journal of Asian Earth Sciences, 25/6, 883-891.
95. Koçak, K., 2006. 'Hybridization of mafic microgranular enclaves: mineral and whole-rock chemistry evidence from the Karamadazı Granitoid, Central Turkey', International Journal of Earth Sciences, 95/4, 587-607.
96. Zedef V., Koçak K., Döyen A., Özşen H. ve Kekeç B., 'Effect Of Salt Crystallization On Stones Of Historical Buildings And Monuments, Konya, Central Turkey', Article, Building and Environment, 42/3, 1453-1457 (2007).
97. Baş, H., Koçak, K., Kansun, G. ve Işık, F., "Orta-Batı Toroslardaki Mesozoik Volkaniklerinin Jeokimyasal Özellikleri", Ceosound, 42, 123 - 137 (2003).
98. Kurt, H., Özkan, A.M. ve Koçak, K., "Geology, Petrography And Geochemistry Of The Subduction Related Volcanic Rocks, West Of Konya, Central Anatolia", Türkiye Jeoloji Bült, 46/2, 39 - 51 (2003).
99. Kurt, H. ve Koçak,K., "Marmaris (Muğla) Peridotinin Petrografik Ve Petrokimyasal Özellikleri", S.Ü. Müh-Mim.Fak.Derg., 18/2, 63 - 73 (2003).
100. Özkan, A.M., Koçak, K. ve Deli. A., "Akyar-Köprülü (Gündoğmuş_Antalya) Civarındaki Üst Triyas Kumtaşlarının (Kasımlar Formasyonu) Provenansı ve Petrografik Özellikleri", Fırat Üniversitesi Fen ve Mühendislik Bilimleri Dergisi, 15/2, 193 - 207 (2003).
101. Kurt, H., Koçak, K., Asan, K., Kadioğlu, Y.K. ve Karakaş, M., 2005. 'Ortoamfibolit ve Metagabroların Petrolojik İlişkileri: Himmetli Köyü Kuzeyi (Niğde)'. S.Ü.Müh.-Mim.Fak. Derg., 20/4, 39-53 (2005).
102. Koçak, K., Arslan, M., Kurt, H., Baş, H. And Döyen, A., 2006. "Petrochemistry And Parent Rock Characteristics Of The Amphibolites in The Gümüşler Formation Of The Niğde Metamorphics, Central Turkey" Türkiye Jeoloji Bul., 49/1, 1-10 (2006).

103. Kurt, H., Koçak, K., Asan, K and Karakaş, M., 2006. 'Niğde, Elmalı güneyi S-tipi Byotit granitoidleri ve anklavlarının petrolojisi', Pamukkale Ü. Müh.Fak.Mühendislik Bilimleri Dergisi, 12/2, 249-258 (2006).
104. Koçak, K., Eren, Y. ve Işık, F., 2007. "Kocakızıl Doleritinin (Akşehir-Konya) Petrografik ve Jeokimyasal Özellikleri", Fırat Üniversitesi Fen ve Mühendislik Bilimleri Dergisi, 19/1, (baskıda) (2007).
105. Akal C., 2003 Mineralogy and Geochemistry of Melilite Leucitites, Balçıkhisar, Afyon (Turkey), Turkish J. Earth Sci., 12, (2003), 215-239
106. Bozkaya G., Gökçe A., 2004. Trace- And Rare-Earth Element Geochemistry Of The Karalar (Gazipaşa-Antalya) Barite-Galena Deposits, Southern Turkey, Turkish J. Earth Sci., 13, (2004), 63-76
107. Koralay E., Dora O. Ö., Chen F., Satır M., Candan O., 2004. Geochemistry and Geochronology of Orthogneisses in the Derbent (Alaşehir) Area, Eastern Part of the Ödemiş-Kiraz Submassif, Menderes Massif: Pan-African Magmatic Activity, Turkish J. Earth Sci., 13, (2004), 37-61.
108. İlbeyli N., 2004. Field, Petrographic and Geochemical Characteristics of the Hamit Alkaline Intrusion in the Central Anatolian Crystalline Complex, Turkey, Turkish J. Earth Sci., 13, (2004), 269-286
109. Karaoğlu Ö., Özdemir Y., Tolluoğlu A.Ü., Karabıyıkoglu M., Köse O., Froger J. L., 2005. Stratigraphy of the Volcanic Products Around Nemrut Caldera: Implications for Reconstruction of the Caldera Formation, Turkish J. Earth Sci., 14, (2005), 123-143.
110. Tokçaeer M., Agostini S., Savaşçın M. Y., 2005. Geotectonic Setting and Origin of the Youngest Kula Volcanics (Western Anatolia), with a New Emplacement Model, Turkish J. Earth Sci., 14, (2005), 143-166.
111. Arslan Z., 2005. Petrography and Petrology of the Calc-Alkaline Sarıhan Granitoid (NE Turkey): An Example of Magma Mingling and Mixing, Turkish J. Earth Sci., 14, (2005), 183-207.
112. Erkül F., Helvacı C., Sözbilir H., 2005. Stratigraphy and Geochronology of the Early Miocene Volcanic Units in the Bigadiç Borate Basin, Western Turkey, Turkish J. Earth Sci., 14, (2005), 227-253.

113. Öztürk Y. Y., Helvacı C., Satır M., 2005. Genetic Relations Between Skarn Mineralization and Petrogenesis of the Evciler Granitoid, Kazdağ, Çanakkale, Turkey and Comparison with World Skarn Granitoids, Turkish J. Earth Sci., 14, (2005), 255-280.
114. Aldanmaz E., 2006. Mineral-Chemical Constraints on the Miocene Calc-alkaline and Shoshonitic Volcanic Rocks of Western Turkey: Disequilibrium Phenocryst Assemblages as Indicators of Magma Storage and Mixing Conditions, Turkish J. Earth Sci., 15, (2006), 47-73.
115. Kekelia S., Kekelia M., Otkhmezurı Z., Özgür N. ve Moon C., 2004. Küçük Kafkaslar ve Doğu Karadeniz Metalojenik Kuşağında Bulunan Demir İçermeyen Metal Yatakları ve Bunların Volkanojenik Sedimenter Aralanmalarında Cevher Oluşum Sistemleri, Maden Tetkik ve Arama Dergisi, Sayı 129, Sayfa 1-15
116. Emre, T. ve Sözbilir H., 2005. Küçük Menderes Grabeni Doğu Ucundaki Andezitlerin (Başova-Kiraz/İzmir) Jeolojisi, Petrografisi ve Jeokimyası, Maden Tetkik ve Arama Dergisi, Sayı 131, Sayfa 1-19
117. Dönmez M., Akçay A. E., Genç Ş.C. ve Acar Ş., 2005. Biga Yarımadasında Orta-Üst Eosen Volkanizması ve Denizel İgnimbiritler, Maden Tetkik ve Arama Dergisi, Sayı 131, Sayfa 49-61
118. Sarıfakıoğlu E., Özen H., Çolakoğlu A. O. ve Sayak H., 2006. Sivrihisar (Eskişehir) Kuzeybatısındaki Dağküplü Ofiyolitini Kesen Alkalen Volkanitlerin Petrojenezine ve Yaşına Yeni Bir Yaklaşım, Maden Tetkik ve Arama Dergisi, Sayı 132, Sayfa 75-90
119. Akçe M. A., Kadioğlu Y. K., 2005. Yozgat Batoliti Kuzey Bölümündeki Lökogranitlerin Petrolojisi, Türkiye Jeoloji Bülteni, Sayı 48/2
120. Cüneyt A., Gençalioğlu Kuşcu G., 2005. Cora Maarı'nın (Erciyes Volkanik Bölgesi) Fiziksel Volkanolojisi, Türkiye Jeoloji Bülteni, Sayı 48/2
121. Delibaş O., Genç Y., 2004. Karacaali (Kırıkkale) Magmatik Kompleksi Demir, Bakır-Molibden ve Kurşun Cevherleşmelerinin Oluşumu ve Kökeni, Türkiye Jeoloji Bülteni, Sayı 47/1

122. Kurta H., Ozkan M., Koçak K., 2003. Orta Anadolu da Konya'nın Batısındaki Dalmabatma ile İlişkili Volkanik Kayaçların Jeolojisi, Petğrafisi ve Jeokimyası, Türkiye Jeoloji Bülteni, Sayı 46/2
123. Sarıfakıoğlu E., 2006. İlyaslar Köyü (Kırkağaç-Manisa) Dolayında Yüzeyleyen Tüflerin Petrografik Özellikleri, Jeoloji Mühendisliği Dergisi, Sayı:64, 30/1
124. Sarıkaya M. A., Çiner A., Zreda M., 2003. "Erciyes volkanı Geç Kuvaterner buzul çökelleri", Yerbilimleri, sayı 27, 59-74
125. Bozkaya G., Gökçe A., 2003. "İnler yaylası (Şebinkarahisar Giresun) kurşun-çinko yataklarında kararlı izotoplar (O, H ve S) jeokimyasal incelemeler", Yerbilimleri, sayı 27, 75-84
126. Güçtekin A., Köprübaşı N., Aldanmaz E., 2004. " Karabiga (Çanakkale) granitoidinin jeokimyası ", Yerbilimleri, sayı, 29, 29-38.
127. Arslan M., Kolaylı H., Temizel İ., 2004. " Güre (Giresun, KD Türkiye) Granodiyorit petrografik, jeokimyasal ve petrolojik özellikleri ", Yerbilimleri, sayı 30 1-21
128. Rızaoğlu T., Parlak O., İşler F., 2005" Esence granitoidinin (Göksun-Kahramanmaraş) jeokimyası, GD Türkiye ",Yerbilimleri, Cilt: 26, No: 1,1-13.
129. Temizel İ., Arslan M., 2005. " İkizce (Ordu) yöresindeki Tersiyer yaşlı kalkalkalen volkanitlerinin mineral kimyası ve petrokimyası, KD Türkiye ", Yerbilimleri, Cilt: 26, No: 1, 25-47.
130. Oyan V., Tolluoğlu A. Ü., 2005, "Bitlis Masifi'nde (Yolcular Metamorfiti) Na-feldispat bakımından zengin lökograditik kayaçlar: Feldispat kaynağı olarak bir potansiyel", Yerbilimleri, Cilt: 26, No: 3, 1-12.