

# KARADENİZ TEKNİK ÜNİVERSİTESİ

KARADENİZ TECHNICAL UNIVERSITY



Prof. Dr. İbrahim Uysal  
Prof. Dr. Faruk Aydın

Karadeniz Technical University  
Faculty of Engineering  
Department of Geological Engineering  
61080-Trabzon, TURKEY

Tel: +90 5323024578



Date: 15/02/2018

Dear **Dimitry Konopelko**,

We are pleased to inform you that your following abstract has been accepted as an **Oral Presentation** during the 8<sup>th</sup> Geochemistry Symposium which will be held in Antalya (Turkey) between 02-06 May 2018.

***Early Permian Intrusions of the Alai Range: Understanding Tectonic Settings of Hercynian Post-Collisional Magmatism in the South Tien Shan, Kyrgyzstan***

The time allocated for each oral presentation is 15 minutes – 12 minutes for presentation and 3 minutes for discussion. Authors will be required to bring their PowerPoint presentation on a memory stick to the symposium to upload and run from the Secretariat's computer.

Posters must be portrait and 120 cm height x 90 cm width (maximum size) and should be readable from a distance of 1-2 meters.

Please note that only the abstracts presented (oral or poster) during the symposium will be included in the abstract book.

If you wish to prepare the full text of your abstract and would like to submit it to one of the special issues (Ore Geology Reviews / Journal of Asian Earth Sciences) we plan to organize, please send your paper title and author list to [8.jeokimya@gmail.com](mailto:8.jeokimya@gmail.com) by 20<sup>th</sup> February 2018.

If you have any questions, please do not hesitate to contact us.

Looking forward to seeing you in Antalya (Turkey) in May 2018.

With our best wishes,  
On behalf of the Organizing Committee  
Prof. Dr. İbrahim Uysal

E-Mail: [8.jeokimya@gmail.com](mailto:8.jeokimya@gmail.com)  
Web: [www.ktu.edu.tr/jeokimya8eng](http://www.ktu.edu.tr/jeokimya8eng)



## Early Permian Intrusions of the Alai Range: Understanding Tectonic Settings of Hercynian Post-Collisional Magmatism in the South Tien Shan, Kyrgyzstan

Dmitry Konopelko<sup>1,2</sup>, Simon Wilde<sup>3</sup>, Reimar Seltmann<sup>4</sup>, Rolf Romer<sup>5</sup>, Yuriy Biske<sup>1</sup>

<sup>1</sup>Geological Faculty, St. Petersburg State University, 7/9 University Embankment, St. Petersburg, 199034, Russia

<sup>2</sup>Novosibirsk State University, 2 Pirogova St., Novosibirsk, 630090, Russia

<sup>3</sup>Department of Applied Geology, Curtin University, G.P.O. Box U1987, Perth, Western Australia 6845, Australia

<sup>4</sup>Natural History Museum, Centre for Russian and Central EurAsian Mineral Studies (CERCAMS), London SW7 5BD, UK

<sup>5</sup>Deutsches GeoForschungsZentrum (GFZ), Telegrafenberg, D-14473 Potsdam, Germany  
(d.konopelko@spbu.ru)

We present bulk rock major-trace elements and Sr–Nd–Pb–Hf isotope data as well as the results of single grain U–Pb zircon dating for ten granitoid samples and alkaline intrusions of the Alai segment of Kyrgyz South Tien Shan (STS). The intrusions comprise four geochemically-contrasting suites, including: (1) I-type granites, (2) shoshonitic granitoids, (3) peraluminous granitoids including S-type leucogranites and (4) alkaline rocks and carbonatites. Tectonic position of the intrusions and new geochronological data indicate that these diverse magmatic rocks of the Alai segment formed coevally in a post-collisional setting. Five zircon U–Pb ages obtained from the Alai granitoids are in the range of ~287–281 Ma and well define the main post-collisional magmatic pulse at 290–280 Ma, which is similar to the age of post-collisional intrusions elsewhere in the STS. An age of 287±4 Ma, obtained for peraluminous granodiorite of the Liayliak massif, emplaced within the amphibolite-facies metamorphic rocks of the Zeravshan-Alai block, is indistinguishable from ca. 290 Ma age of peraluminous granitoids emplaced coevally with the Barrovian-type metamorphic rocks from the Garm block. The Sr–Nd–Pb–Hf isotopic compositions of the studied intrusions are consistent with the reworking of crustal material with 1.6–1.1 Ga average crustal residence times, indicating the formation of the Alai segment on a continental basement with Mesoproterozoic or older crust. The pattern of post-collisional magmatism in the Alai segment, characterized by emplacement of I-type and shoshonitic granitoids in combination with coeval Barrovian-type metamorphism, is typical for the fossilized active margins and is markedly different from the pattern of post-collisional magmatism in the adjacent Kokshaal segment of the STS with predominant A-type granitoids that formed on a passive margin of the Tarim Craton. We suggest that during the middle-late Carboniferous the Alai segment probably comprised a microcontinent with Precambrian basement located between the Turkestan Ocean to the north and an inferred short-lived basin to the south, where the evidence of supra-subduction magmatism was largely destroyed by subduction erosion or other tectonic processes. In this scenario the formation of the alkaline intrusions and carbonatites at post-collisional stage can be explained by interaction of ascending asthenospheric material with the lithospheric keel of the Alai microcontinent.

**Keywords:** Tien Shan (Tianshan), postcollisional intrusions, zircon ages, Sr–Nd–Pb–Hf isotopes





**Участники экскурсии  
на одном из скарновых месторождений  
центральной Турции**



**На экскурсии в Каппадокии**