**Proposal for a Geological Society of London Special Publication**

Title: Deep-Seated Magmas as Mantle Dynamic ‘Probes’

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*Meeting date and organizing body: EGU General Assembly 2019, 7–12 April 2019, Vienna, Austria*

**Aims of the book:** The proposed special volume includes the results obtained by groups from numerous academic and prospecting Companies of Europe, Russian Federation and Asia and America and devoted to the deep seated magmas and evolution there deep crust and mantle roots

*The proposed special volume includes new results pertaining to the deep seated magmas and evolution there deep crust and mantle roots by a range of academic and corporate research groups based in Western Europe, the Russian Federation, East Asia, and North America.*

*This project will attempt to address the following problem areas:*

*(1) Structural and compositional reconstruction of lithospheric mantle roots in response to mantle plume and subduction activity;*

*(2) Interactions of plume- and subduction-related melts and fluids with the continental lithosphere mantle, and associated metasomatic processes;*

*(3) The nature of magmatic sources, petrogenetic conditions (P-T-fO2) and melting within and below in the lithosphere and sublithospheric mantle;*

*(4) Melting processes, fluid migration and phase transformations associated with deep mantle plume regions*

*(5) Modes of melt migration and ascent as constrained by numerical modelling and microstructures of mantle xenoliths*

*(6) The role of mantle melts and fluids in generating hybrid and acid magmas.*

*These topics will be addressed on the basis of geochemical data for mantle-derived melts, fabric studies of mantle xenoliths and orogenic peridotites and experimental and computer-based simulations"*

**Dates of submission: 15 of September -31 October 2019.**

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*1Department of Geology, University of Calcutta, India*

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*Maria Bogina, Evgenii Sharkov, Alexey Chistyakov, and Valerii Zlobin*

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**5**. [**The Paleoproterozoic Kolvitsa anorthosite massif: New Data on the U–Pb Age and Geochemical Features of Zircon**](https://meetingorganizer.copernicus.org/EGU2019/EGU2019-227.pdf)

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*Evgenii Sharkov1, Maria Bogina1, Alexei Chistyakov1, and Boris Belyatsky2*

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2. A.P. Karpinsky Russian Geological Research

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 *Zhmodik S.M. 1,2, Lazareva Elena 1, Surkov Oleg1, Kirichenko Ivan., Tolstov Alexandr3*

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*Nikolai Vladykin1 Kotov A. B., Fu-Yun Wu3, Alymova N.A. 1 Sotnikova I. A. 1*

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*Sergei Rasskazov1, Irina Cuvashova1, Yi-min Sun2, Elena Saranina1, Nikolay Gerasimov1, and Tatiana Vladimirova1*

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**1. University of Illinois at Chicago, Earth and Environmental Sciences, Chicago**

**2. School of Earth Science and Resources, China University of Geosciences, Beijing 100083, P. R. China**

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*Nadezda Sushchevskaya 1, Boris Belyatsky2, Natalya Migdisova1, Evgeniy Dubinin3 Robert Krymsky 1*

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**.***Shchukina E.V.1,2, Kolesnichenko M.V. 1,2, Malygina E.V.1, Zedgenozov D.A.1,2*

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*Valentin Afanasiev1 and Nikolai Pokhilenko1*

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*Valentin Afanasiev1, Mikhail Vavilov1, Igor Ashchepkov1, Leonid Baranov1, and Ekaterina Egorova1.*

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**23. Titanium in garnets as indicator of inhomogeneous composition of lithosphere mantle.**

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*Kostrovitsky S.I. 1,2, Yakovlev D.A.1, Kovaleva S.A. 1, Pokhilenko N.P. 3, Kalashnikova1 T.V. 1, Sun4 Jing4, Chuan-Zhou5 Liu, Fu-Yuan Wu5.*

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*Alexander Ivanov1, Alexander Tolstov1, Nikolai Medvedev2*

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**E.Experimental and numerical modeling of mantle mineralogy composition and processes**

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*Ekaterina Kiseeva1, Iuliia Koemets2, Niccolò Satta2, Hauke Marquardt3, Alexander Kurnosov2, Thomas Stachel4, Jeff Harris5 and Leonid Dubrovinsky2.*

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**33**.  **Formation of K-Cr titanates in the system chromite-rutile/ilmenite-K2CO3-CO2-H2O at 3.5 and 5 GPa: applications to the mantle metasomatism***Valentina G. Butvina1, Sofia S. Vorobey1, Oleg G. Safonov1, Galina V. Bondarenko1*

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**34**. [**Experimental study of paragenesis of ultramafic lamprophyres: aillikites from Southwestern Siberia.**](https://meetingorganizer.copernicus.org/EGU2019/EGU2019-1027.pdf)

***Maria Smirnova****1****,*** *Valentina Butvina1 and Oleg Safonov1*

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*Grigoriy Kuznetsov*1 *and Victor Sharapov*1,2

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*Sergey Zhmodik1,2, P Ivanov3, Dmitry Belyanin1,2, Eugenia Airiyants1, Olga Kiseleva1 and Alexey Travin1,2*

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These book volume may be interesting to the wide range of scientific auditory;

1. To the people working of the layered intrusions
2. To prospecting and industrial geologist who are working with the PGE deposits
3. To the kimberlite geologist and petrologists because it includes not only description of the kimberlite fields including northern territories of Siberia and Archangelsk which are purely described in the literature.
4. To the prospecting and economic geologists working in kimberlite areas because
5. To the people studying eclogites and mantle stratification
6. To the people which are interesting in diamond origin and diamond inclusions
7. To the wide audience interesting in plume and arc volcanism
8. To experimental petrologists working in with high pressures
9. For specialists in carbonatites and trace element deposits
10. To the scientists modelling numerically modeling magmatic processes especially the behavior of the mafic melts in conduits
11. To the student specializing in petrology of deep seated rocks and magmas

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