

## Scientific Publications

### *Papers published in International Journals*

1. Gupta A.K. (1972): The system forsterite-diopside-akermanite-leucite and its significance, in the origin of potassium-rich mafic and ultramafic rocks. *Amer. Mineral.* 57, 1242-1259.
2. Gupta, A.K. and Fleet, M.E. (1973): Review of the "Interpretation of Geological Phase Diagrams" by E.H. Ehlers. W.H. Freeman and Company. 1972. 280, *Geophys.* 5638, 5, 991.
3. Gupta, A.K., and Lidiak E.G. (1973): The system diopside-nepheline-leucite, *Contrib. Min. Petrol. Petrol.* (Germany), 41, No. 3, 231-239.
4. Gupta, A.K., Onuma K., Yagi, K, and Lidiak E.G. (1973): Effect of silica concentration on the solubility of titanium. In: clinopyroxene in the system diopside-CaTiAl<sub>2</sub>O<sub>6</sub>-SiO<sub>2</sub>. *Contrib. Mineral. Petrol.* (Germany), 41, No. 4, 333-344.
5. Gupta, A.K., Venkateshwaran, G.P., Lidiak, E.G. and Edgar, A.D. (1973): The system diopside-nepheline-akermanite-leucite and its bearing on the genesis of alkaline-rich mafic and ultramafic volcanic rocks. *J. Geol.* (published by University of Chicago). 81, 209-218.
6. Gupta, A.K. and Edgar, A.D. (1974): Phase relation in the system nepheline-leucite-anorthite. *Canad. Mineral.* 12, 354-356.
7. Gupta, A.K. and Edgar, A.D. (1975): Leucite-Na-feldspar incompatibility: An experimental study. *Mineral Mag.* 40 (London), 337-384.
8. Gupta, A.K. and Fyfe W.S. (1975): Leucite survival: The alteration to analcime. *Canad. Mineral.* 13, 361-363.
9. Gupta A.K. and Yagi K. (1976): Experimental study of some assimilative reactions related to the genesis of the leucite-bearing rocks. *Bull. Volcan. Soc. Japan.* 22, 65-74.
10. Gupta, A.K., Yagi, K., Hariya, Yu, and Onuma, K. (1976): Experimental investigations of some synthetic leucite-rocks under water vapour pressures. *Proc. Japan Acad. Sci.*, 52, 469-472.
11. Gupta, A.K. and Yagi, K. (1977): Experimental study on two picrites with reference to its genesis. 3rd Kimberlite Conference held at Santa Fe, New Mexico, USA, 116-118.
12. Gupta, A.K. (1978): Solubility of AgCl in NaCl-bearing solutions at 250°C and 400°C under different pressures, *J. Fac. Sci. Hokkaido Univ.* (Yagi Volume), 18, 3, 445-448.
13. Gupta, A.K. and Yagi, K. (1978): Forsterite-grossularite incompatibility: An Experimental study. *Proc. International Geological Cong.* (held in Tokyo). 242-243.
14. Gupta, A.K. and Yagi, K. (1978): Experimental investigation on forsterite-grossularite incompatibility in presence of excess water. *Bull. Volcan.* 41(4), Chapter 5, in *Experimental Petrology* (eds. Y. Akimoto and K. Yagi), 657- 663.
15. Gupta, A.K. and Chatterjee, N.D. (1978): Synthesis, composition, thermal stability, thermodynamic properties of bicchulite Ca<sub>2</sub>[Al<sub>2</sub>SiO<sub>6</sub>](OH)<sub>2</sub>. *Amer. Mineral.*, 63., No. 4, 58-65.

16. Gupta, A.K. and Yagi, K. (1979): Experimental study of some assimilative reactions related to the genesis of the leucite-bearing rocks. *Bull. Volcan. Soc. Japan*, 22, 65-74.
17. Gupta A.K. and Yagi K. (1979): Experimental study of two picrites with reference to the genesis of kimberlite. In: *Kimberlites, diatremes and diamonds, : Their Geology and Petrology and Geochemistry* (eds. F.R. Boyd and H.O.A. Meyer), Am. Geophysical Union, Washington DC, 339-343.
18. Gupta, A.K. and Yagi, K. (1980): *Petrology and Genesis of Leucite Bearing Rocks*. Springer-Verlag, Berlin, P. 252.
20. Yagi, K. and Gupta, A.K. (1980): On the origin of leucite-bearing rocks., In Commemoration of the 50th anniversary of Japan Assoc. Mineral. Petrol. & Econ. Geologist. Special Issue 2, 279-287 (In Japanese).
21. Yagi, K. and Gupta, A.K. (1981): Pseudoleucite from Tezhsarsk, USSR and its genesis. *Rock Forming Minerals, Proc. XI General Meeting of Internat. Mineral. Assoc. Novosibirsk*. 197-208.
22. Gupta, A.K., LeMaitre, R.W., Haukka, M.L., Yagi, K. (1983): Geochemical studies on the carbonated apatite glimmerite, from Damodar valley India, *Proc. Japan Acad. Sci.*, 59 Ser. B, No. 5, 113-116.
23. Gupta, A.K. and Yagi, K., Lovering, J., and Jaques, A.L. (1986): Geochemical and microprobe studies of diamond- bearing ultramafic rocks from central and south India. *Proc. 4th Internat. Kimberlite Confer. (held at Perth)*, Geol. Soc. Australia, No.16, 27-29.
24. Gupta, A.K., Green, D.H. and Taylor, W.R. (1987): The liquidus surface of the system forsterite-nepheline-silica at 28 kb. *Amer., J. Sci*, 287, No. 6, 560-565.
25. Gupta, A.K. and Green, D.H. (1988): Experimental study of the system forsterite-kalsilite-SiO<sub>2</sub> in presence or absence of volatiles (CO<sub>2</sub> or H<sub>2</sub>O) under 28 kb. *Mineral. Petrol. (Austria)*, 39, 163-174.
26. Gupta, A.K. (1992): Experimental metamorphic mineralogy dealing with the role of fluid and reaction equilibria, *High Grade metamorphics*, Published by Theophrastus Publications S.A., Greece, 15-51.
27. Bansal, N., and Gupta, A.K. (1992): Phase relations in the system forsterite-albite-anorthite under 28 and 35 kb pressure at variable temperatures and its significance. *Abstracts 29th International Geological Congress, Kyoto Japan*.
28. Pati, J.K. and Gupta A.K. (1992): Experimental study of the join diopside-albite-nepheline under 10 kb (P<sub>H<sub>2</sub>O</sub> = P<sub>total</sub>) and 28 kb at variable temperatures, *Abstracts 29th International Geological Congress, Kyoto Japan*.
29. Singh, P. and Gupta A.K. (1992): Phase relations in the join diopside-nepheline under 10 kb (P<sub>H<sub>2</sub>O</sub> = P<sub>total</sub>) and variable pressure up to 28 kbar in absence of volatiles *Abstracts 29th International Geological Congress, Kyoto Japan*.
30. Gupta, A.K. (1995): Constraints on the Mantle Sources of the Deccan Traps from the Petrology and Geochemistry of the Basalts of Gujarat State (Western India). *Jour. Petrol.* 36. 1393-1432 (Oxford Univ. Press). With Melluso, L., Beccaluva, L., Brotzu, P., Gregnanin, A., Morbideli L., and Traversa G.)
31. Gupta A.K., Kar, R and Arima, M. (1998): Experimental Studies on the System Phlogopite-Mn-Phlogopite at 1, 10 and 20 Kbars and 750°C in Presence of Excess Water under NNO Buffer Conditions, *Japanese Jour. Min. Pet. Econ. Geol.* 93(4), 129-137.
32. Singh, P., Arima M. and Gupta, A.K. (2000): Phase equilibrium constraints on the petrogenesis of nephelines with reference to the system diopside-nepheline under variable P-T conditions in the presence or absence of water. *Jour. Mineral. Petrol. Sciences (Japan)*. 95, 113-124.

33. Pati, J.K., Arima M. and Gupta A.K. (2000): Experimental Study of the Diopside Albite-Nepheline at  $P(\text{H}_2\text{O}) = P(\text{Total}) = 2$  and 10 kbar and at  $P(\text{total}) = 28$  kbar. *The Canadian Mineralogist*. 38, 1177-1191.
34. Gupta, A.K., Chattopadhyaya, B., Fyfe, W.S. and Powell, M. (2002): Experimental studies on three potassium-rich ultramafic rocks from Damodar Valley, East India. *Mineralogy and Petrology*, 74, 2-4, 343-360.
35. Jia, Y., Kerrich, R., Gupta, A.K. and Fyfe, W.S. (2003):  $^{15}\text{N}$  enriched Gondwana lamproites, eastern India: atmospheric N in the mantle source. *Earth Plan. Sci. Lett Elsevier, Holland*. 215, 43-56.
36. Gupta, A.K, Chattopadhyay, S, Chattopadhyay, B. and Arima, M (2006): Experimental study of the system diopside-nepheline-sanidine under 0.1, 1 and 2 GPa [ $P(\text{H}_2\text{O}) = P(\text{Total})$ ] : Its significance in the genesis of alkali-rich basic and ultrabasic rocks. *Lithos*, 86, 91-109.
37. Dwivedi, M.M., Gupta, A.K. and Arima, M. (2007): Experimental study of the joins leucite-akermanite-albite and leucite-akermanite-albite<sub>50</sub>Anorthite<sub>50</sub> under atmospheric pressure and 1 GPa ( $\text{H}_2\text{O}$  saturated condition): its significance in the leucite-sodic plagioclase and melilite plagioclase incompatibility. *Jour. Mineral. Petrol. Soc. (Japan)*
38. Nag, K., Arima, M. and Gupta, A.K. (2007): Experimental study of the synthetic forsterite-diopside-leucite and forsterite-leucite-akermanite up to 23 GPa [ $P(\text{H}_2\text{O}) = P(\text{total})$ ] and variable temperatures: its significance in the genesis of ultrapotassic rocks: *Lithos Vol 98, Nos. 1-4, 2007, pg.177-194*.
39. Gupta, A.K., Dwivedi, M.M. and Fyfe, W.S. (2009) : Geophysical and Experimental studies of the Earth's Interior. In : *Physics and Chemistry of the Earth's Interior*, Springer (ISBN No. 978-81-8489-196-6), 1-27.
40. Gupta, A.K., Dwivedi, M.M., Bhattachariya, H and Dasgupta S. (2010) : Silica Undersaturated Portion of the System Nepheline – Kalsilite –  $\text{SiO}_2$  at 2 GPa [ $P(\text{H}_2\text{O}) = P(\text{Total})$ ], October issue *Canad Mineral*. 48.
41. Dasgupta, Soumitra and Gupta, A.K., (2012): The System Forsterite-Diopside-Silica at 7 Gpa and its Significance to Mantle Melting Behavior and the Genesis of Komatiites. (in press).
42. Barua, A., Gupta, A. K., Mandal, N and Singh, R. N. (2013): Rapid Ascent condition of Diamond-bearing kimberlite magma: Findings from High Pressure-temperature Experiments and Finite Element Models. *Technophysics* (in press).