



References

REFERENCES

- ADAMS, D. M. and GARDNER, I. R. (1974). Single crystal vibration spectra of beryl and dioptase. *Journal of chemical society, Dalton Transaction.* 1502-1505.
- AINES, R. D. (1984). Trace hydrogen in Minerals. Ph.D. Thesis, California Institute of Technology, Pasadena, California, Published.
- AINES, R. D. and ROSSMAN, G. R. (1984a). Water in minerals? A peak in the infrared. *Journal of Geophysical Research,* **89**, 4059-4072.
- AINES, R. D. and ROSSMAN, G. R., (1984b)., The high temperature behaviour of water and carbon dioxide in corderite and in beryl., *American Mineralogist.,* **69**, 319-327
- AINES, R. D. AND ROSSMAN, G. R. (1985). The high temperature behaviour of trace hydrous components in silicate minerals., *American Mineralogist.,* **70**, 1169-1179.
- ANDERSON, L. O., (1979). The difference between Maxixe beryl and Maxixe type beryl : An EPR investigation. *Journal of Gemmology.,* **5**, 313-317.
- ARTIOLI, G., RINALDI, R. STAHL, K and ZANAZZI, P. F. (1993). Structure refinements of beryl by single crystal neutron and x-ray diffraction., *American Mineralogist.,* **78**, 762-768.
- AURISICHHIO, C, GUBESSI, O. and ZECCHINNI, P., (1994)., Infrared spectroscopy and crystal chemistry of the beryl group., *Canadian Mineralogist.,* **32**, 55-68.
- AURISICHHIO, C., FIORAVANTI, G., GRUBESSI, O., and ZANAZZI, P. F. (1988). Reappraisal of the crystal chemistry of beryl., *American Mineralogist.,* **73**, 826-837.
- BABU, K. N., SEBASTIAN, A, SANTOSH, M, UNNIKRISHNAN, P. A and PILLAI, P. M. (1994). Volatile constituents in some Indian beryls : A FT-IR study, *Bulletin of Indian Geologist,* **27**, 45-53.
- BABU, K. N. and SEBASTIAN, A (1998). On the genesis of Indian beryls., *Journal of Geological Society of India,* **51**, 323-330.
- BAKAKIN, V. V., RYLOV, G. M and BELOV, N V. (1970). X-ray diffraction data for identification of beryls isomorphs. *Geochemistry International.,* **11**, 924-933.

- BAKAKIN, V.V, BELOV, N.V., (1962)., Crystal chemistry of beryl ., *Geochemistry*, **5**, 484-500.
- BAKAKIN, V.V., RYLOV, G. M. and BELOV, N.V. (1969). Crystal structure of lithium bearing beryl. *Dokl. Akad. Sci. USSR*, **188**, 659-662.
- BAKAKIN, V.V., RYLOV, G. M., and BELOV, N.V. (1967). Correlation between the chemical composition and cell parameters of beryls. *Dokl. Akad. Nauk. SSSR*, **173**, 1404-1402.
- BALL, S H. (1931). Historical notes on gem mining. *Economic Geology*, **26**, 681-738.
- BANCROFT, G. M. (1973). Mossbauer spectroscopy; in *An introduction for Inorganic Chemists and Geochemists*, McGraw - Hill, 252p.
- BANCROFT, G. M. AND STONE, A. J. (1968). Application of the Mossbauer effect to silicate mineralogy, II. Iron silicates of unknown and complex crystal structures., *Geochim Cosmochim Acta*, **32**, 547-559.
- BANCROFT, G. M.(1970). Quantitative site population in silicate mineralogy by the Mossbauer effect., *Chemical Geology*, **5**, 255-258.
- BANCROFT, G. M., MADDOCK, A. G. AND BURNS, R. G. (1967). Application of the Mossbauer effect to silicate mineralogy, I. Iron silicates of known crystal structure., *Geochim Cosmochim Acta*, **31**, 2219-2246.
- BECK, H. C. (1941). The beads from Taxila. Memoirs of the Archaeological Survey of India, **65-66**.
- BELOV, N. V. (1958). Essays on structural mineralogy., Mineral Sbornik. Geological society of London, 15-42.
- BELOV, N. V and MATVEEVA, G. (1950). Determination of parameters of beryl by the method of partial projection. *Dokl. Akad. Nauk. USSR*, **73**, 299-302.
- BEUS, A. A., (1965). Geochemistry of beryllium and Genetic types of beryllium deposits (ed. Lincoln R. Page). W. H. Freeman and Company, 401p.
- BIRDWOOD, G. C. M.(1880). *The industrial Arts of India*, London, Chapman and Hall, 344p.
- BLAK, A. R., SADAO, ISOTANI. and SHIGUEO, WATANABE., (1982)., Optical absorption and Electron spin Resonance of blue and green beryl. *Physics and Chemistry of Minerals.*, **8**, 161-166.

- BLAK, A. R.; SADAO, ISOTANI. and SHIGUEO, WATANABE., (1983)., Optical absorption and ESR of blue and green beryl : A reply. *Physics and Chemistry of Minerals.*, **9**, 279-280.
- BRAGG, W L. and WEST, J., (1926)., The structure of beryl $\text{Be}_3\text{Al}_2\text{Si}_6\text{O}_{18}$. *Proceedings. Royal. Society. London Sec. A.*, **111**, 691-714.
- BROWN, G.E. JR. and MILLIS, B. A. (1986). High temperature structure and crystal chemistry of hydrous alkali-rich beryl from Harding pegmatite, Taos county, New Mexico, *American Mineralogist.*, **71**, 547-546.
- BROWN, J. C. (1953). Emeralds in India. *The Gemmologist*, **22**, 133-136, 165-168.
- BURNS, R. G. (1970). *Mineralogical application of crystal field theory.*, (1st edition) Cambridge university press, London. 400p.
- BURNS, R. G. (1993). *Mineralogical application of crystal field theory.*, (2nd edition) Cambridge university press, London. 551p.
- BURTON, W.K., CABRERA, N. AND FRANK, F. C. (1951). The growth of crystals and equilibrium structure of their surfaces, *Philosophical Transactions*, **A243**, 299-338.
- CALAS, G. (1988). Electron Spin Resonance spectroscopy; in *Spectroscopic methods in Mineralogy and Geology* (F. C. Hawthorne, ed.), Reviews in Mineralogy, **18**, Mineralogical Society of America, Washington D. C., 513-563.
- CARSON, D.S., ROSSMAN, G. R and VOUGHON, R. W. (1982) Orientation and motion of water molecules in corderite: A proton nuclear magnetic resonance study. *Physics and Chemistry of Minerals.*, **8**, 14-19.
- CASTNER, T. JR., NEWELL, G. S., HOLTON, W. C. and SLICHTER. C. P., 1960. Note on the Paramagnetic Resonance of iron in glass. *Journal of Chemical Physics.*, **32**, 668-670.
- CENRY, P. (1975). Alkali variations in pegmatite beryl and their petrogenetic implications. *Neus Jahrbuch fur Minralogie Abhandlungen*, **123**, 198-212.
- CENRY, P. (1975). Beryl from granitic pegmatite at Greer lake, SE Manitoba., *Canadian Mineralogist*, **13**, 55-61.
- CENRY, P. and SIMPSON, F. M. (1977). The Tanco pegmatite Bernic lake, Manitoba, IX Beryl., *Canadian Mineralogist* , **15**, 489-499.

- CHAROY, B, DANOTO, DE PHILLIPE, BARRES, O and PINTO COELHO, P (1996). Channel occupancy in an alkali poor beryl from Serra Branca : Spectroscopic characterisation, *American Mineralogist*, **81**, 395-403.
- COHEN, J. P., ROSS, F. K. AND GIBBS, G.V. (1977). An X-ray and neutron diffraction study of hydrous low corderite., *American Mineralogist*, **62**, 67-78.
- CROOKSHANK, H, (1948). Minerals of Rajputana Pegmatites. *Trans. Min. Geol. Inst.*, **42**, No 2.
- CROOKSHANK, H. (1947). Emeralds in Mewar. Geological Survey of India. *Indian Minerals.*, **1**, 28-30.
- DANON, D. E AND KUPL, J L. (1953). Excess helium and Argon in beryl and other minerals., *American Mineralogist*, **43**, 433-459.
- DAVIR, M. and LOW, W., (1960). Paramagnetic Resonance and optical spectrum of iron in beryl. *Physics Review.*, **119**, 1587-1591.
- DE ALMEIDA SAMPAIO FILHO, H and SINGHINOLF, G. P. and GALLI, E.,(1973). *Contribution to Mineralogy and Petrology.*, **38**, 279-290.
- DHAR, K K. and PHADKE, A. V. (1964). On the occurrence of beryl and other minerals in pegmatites in India. Report of the twenty second international Geological congress session, India. *Proceedings of section 6 on "Minerals and Genesis of Pegmatites*, New Delhi, 213-224.
- DOETLER, C. (1893). *Edelsteinkunde*. Leipzig: West and Company, 260p.
- EDGAR, A. and VANCE, E. R., (1977). Mossbauer effect of kyanite, aquamarine and corderite showing intervalence charge transfer. *Physics and Chemistry of Minerals.*, **1**, 165-178.
- ENRAF NONIUS (1989). CAD-4 software Version 5, Enraf-Nonius 1989, the Netherlands.
- EVANS, H.T JR. and MROSE, M.E (1966). Crystal chemical studies of caesium beryl., *Geological Society America Annual Meeting. San Francisco Program.* Abstract. 63.
- FARMER, V. C (1974). *The infrared spectra of Minerals*, Monograph 4, Mineralogical Society of London, 529p.
-
- FAYE, G. H (1972). Relationship between crystal field splitting parameter and metal oxygen bond distance as an aid in the interpretation of absorption spectra of Fe²⁺ bearing materials., *Canadian Mineralogist*, **11**, 473 - 487.

- FEKLICHEV, V. G., (1963). Chemical composition of minerals of the beryl group, character of isomorphism and position of principal isomorphic elements in the crystal structure. *Geochemistry*, **4**, 410-421.
- FRONDEL, C. (1952). Effect of heat on the colour of beryl. *Gemmologist*, **21**, 197-200.
- GAVRUSEVICH, B. A. and SARAPULOV, F. Y. (1941). Change of colour and optical properties of beryllium on heating. *Dokl. Akad. Nauk. USSR*. **31**, 8.
- GERVAIS, F., PIRIOU, B. AND COBANNES, F. (1972). Anharmonicity of infrared vibration modes in beryl. *Physics Status Solidi*, **51**, 701-713.
- GHERA, A. and LUCCHESI, S. (1967). An unusual vanadium beryl from Kenya. *Neues Jahrbuch für Mineralogie Abhandlungen*, 262-274.
- GIBBS, G. V., BERECK, D. E. and MEAGHER, E. D., (1968). Structural refinement of hydrous and anhydrous synthetic beryl. $\text{Al}_2(\text{Be}_3\text{Si}_6)\text{O}_{18}$ and emerald $\text{Al}_{1.9}\text{Cr}_{0.1}(\text{Be}_3\text{Si}_6)\text{O}_{18}$. *Lithos*, **1**, 275-285.
- GOLDMAN, D. G., ROSSMAN, G. R. and DOLLASE, W. A. (1977). Channel constituents in Corderite. *American Mineralogist*, **62**, 1144-1157.
- GOLDMAN, D. S., ROSSMAN, G. R. and PRAKIN, K. M., (1978). Channel constituents of beryl. *Physics and Chemistry of Minerals*, **3**, 225-235.
- GRAZIANI, G., LUCCHESI, S. and SCANDALE, E. (1990). Growth and specific growth marks in pegmatite beryls. *Physics and chemistry of minerals*, **17**, 379-384.
- GRIFFIN, I. J. (1950). Observations of unimolecular steps in crystal surfaces. *Philosophical Magazine*, **41**, 196-199.
- GRIFFITHS, P. R. AND HASETH, J. A. (1986). *Fourier Transform Infrared spectroscopy*. John Wiley and Sons, New York.
- GRUM-GRHIMAILO, S. V. (1940). Colouration of minerals due to chromium. *Tr. Kristallogr. Labor. Akad. Nauk. USSR*. **2**.
- HAGEMANN, H., LUCKEN, A., BILL, H., GYSLER-SAZ, J and STALDER, H. A. (1990). Polarised Raman spectra of beryl and bazzite. *Physics and Chemistry of Minerals*, **17**, 395-401.
- HAWTHORNE, F. C. (1988). Mossbauer spectroscopy; in *Spectroscopic methods in Mineralogy and Geology* (F. C. Hawthorne, ed.), *Reviews in Mineralogy*, **18**, Mineralogical Society of America, Washington D.C., 255-333.

- HAWTHORNE, F. C. AND WAUCHUNAS. G. A. (1988). Spectral fitting; in *Spectroscopic methods in Mineralogy and Geology* (F. C. Hawthorne, ed.), Reviews in Mineralogy, 18, Mineralogical Society of America, Washington D. C., 63-96.
- HAWTHORNE, F.C. and CERNY, P. (1977). The alkali metal position in Cs-Li beryl. *Canadian Mineralogist*, 15, 414-421.
- HAZEN, R. M., AU, A. V. and FINGER, L. W., (1986)., High pressure crystal chemistry of Beryl ($\text{Be}_3\text{Al}_2\text{Si}_6\text{O}_{18}$) and Euclase ($\text{BeAlSiO}_4\text{OH}$). *American Mineralogist*, 71, 977-984.
- HOBBS, B. E. (1981). The influence of metamorphic environment upon the deformation of minerals. *Tectnophysics*., 78, 335-383.
- HOFMEISTER, A.M., HOERING, T. C. and VIRGO. D., (1987), Vibrational spectroscopy of Beryllium Aluminosilicates. Heat capacity calculations from Band assignments, *Physics and Chemistry of Minerals.*, 14, 205-224.
- HOFMESITER, A. M. (1995)., Infrared Microspectroscopy in Earth Science, in *Practical guide to Infrared Microspectroscopy* (ed. Humecki, H. J), 2nd edition, Marcel Dekker Inc, New York, 377-413.
- ISOTANI, S., WAGNER, W. FURTANTO., RONALD, ANTONINI. and OSTVALDO, LUIS. DIAS.,(1989)., Line shape thermal kinetics analysis of the Fe^{2+} band in Brazilian beryl. *American Mineralogist*. 74, 432-438.
- IYER, L. A. N. (1948). *A handbook of precious stones*. Calcutta Baptist Mission Press, 188p.
- IYER, L. A. N. (1961). Indian Precious Stones., *Bulletin Geological Survey of India*, 18, 89p.
- JAYRAMAN, N. (1940). A chemical study of the Nellore beryl and the cause of its colouration. *Journal of the Indian Institute of Science*, 23, 30-35.
- JOSHI, M. S. AND KOTRU, P. N (1968). Hillocks on first order prism faces of synthetic quartz., *American Mineralogist*., 53, 825 - 839.
- JOSHI, M. S. AND KOTRU, P. N. (1976). Role of micro crystals in the growth and development of prism faces of cultured quartz (I). Attached microcrystals., *Kristall and Technik*, 11, 913 - 925.

- JOSHI, M. S. AND TOLANSKI, S. (1961). Optical studies on spirals on synthetic quartz crystals. *Proceeding of the Royal Society , London, A260*, 475 - 480.
- JOSHI, M.S. AND ITTAYCHEN, M. A. (1967). Rotation of etch pits on basal cleavage of apophyllite crystals., *Philosophical Magazine*, 16, 717p.
- KAMPF, A. R and FRANCIS, C. A. (1989). Beryl gem nodules from the Bananal mine, Minas Gerais, Brazil, *Journal of Gemmology.*, 25, 25-29.
- KARANTH, R. V., MATHEW, G. AND GUNDU , T. K. (1998). FT-IR spectroscopic investigation of hydrous components in sillimanites from Easter ghat granulite terrain, India., *Gondwana Research.*, (In press).
- KAUPPINEN, J. K., MOFFATT, D. J., MANTSCH, H. H. and CAMERON, D. G. (1981). Fourier Self Deconvolution : a method for resolving intrinsically overlapped bands, *Applied spectroscopy* , 35, 271-280.
- KOIVULA, J. I. (1988). Etch figures on beryl., *Journal of Gemmology*, 21, 141-143.
- KRISHNAN, M. S. (1956). *Geology of India and Burma.*, Higginbothams (P) limited., 536p.
- KURBATOV, I. D. and KARGIN, V. A. (1927). Change of the green colour of beryl into blue., *Priroda*, 16, 719.
- LITTLE, H. P. (1917). An ancient reference to the emerald. *Science.*, 45, 1160, 291-292.
- LIVINGSTON, R., ZELDES, H. (1964). Paramagnetic Resonance study of NO₃ in irradiated KNO₃., *Journal of Chemical Physics*, 41, 4011-4012.
- MACMILLAN, P. and HOFMEISTER, A. M. (1988). Infrared and Raman spectroscopy; in *Spectroscopic methods in Mineralogy and Geology* (F. C. Hawthorne, ed.), Reviews in Mineralogy, 18, Mineralogical Society of America, Washington D. C., 99- 150.
- MADDOCK, A. G. (1985). Mossbauer spectroscopy in mineral chemistry. In (Berry, F. J. and Vaughan, edited). *Chemical bonding and spectroscopy in Minerals chemistry*. Chapman and Hall, New York, 141-191.
- MANIER-GLAVINAZ, V., COUTY, R. and LAGACHE, M (1989) The removal of alkali from beryl . Structural adjustments., *Canadian Mineralogist.*, 27, 663-671
- MARFUNIN, A S (1979a) *Spectroscopy, Luminescence and Radiation centres in Minerals.*, Springer Verlag, New York , 351p.

- MARFUNIN, A. S. (1979b). *Physics of Minerals and Inorganic materials*, Springer Verlag, New York, 340p.
- MATHEW, G., KARANTH, R.V., GUNDU, T. K. and DESHPANDE, R. S., (1998a), Maxixe type colour centres in natural colourless beryl from Orissa, India., *Journal of Gemmology*, 26 , 4, 238-253.
- MATHEW, G., KARANTH, R.V., GUNDU, T. K. and DESHPANDE,R. S., (1997), Channel constituents of alkali poor Orissan beryl : An FT-IR spectroscopic investigation., *Current Science*, 73, 1004-1011.
- MATTSON, S. M. AND ROSSMAN, G. R. (1987). Identifying characteristics of charge transfer transitions in Minerals, 14, 94 - 99.
- MIETHE, A. (1906). Über die farbung von Edelstein durch Radium. *Annalen der Physik*, 19, 633-638.
- MISHRA, B. P. and MOHANTY, B. K. (1995). Geology and Mineral Resources of Orissa. *Society of Geoscientist and Allied Technologists*, 185-202.
- MOTIMER, H. S. WALLACE, R. G. and PAUL, R. B. (1965). Difference in minor elements composition of beryl in various environments, *American Mineralogist*, 50, 1783-1795.
- MUKERJEE, B (1951). Colour of beryl., *Nature*, 167, 602.
- NAKAMOTO, K. (1963). Infrared spectra of inorganic and coordination compounds, Wiley, New York, 328p.
- NASSAU, K and WOOD, D. L. (1968). An examination of red beryl from Utah. *American Mineralogist*, 53, 801-806.
- NASSAU, K. (1973). Examination of Maxixe type blue and green beryl. *Journal of Gemmology*, 13, 296-301.
- NASSAU, K. (1983). *The physics and chemistry of colour*. John Wiley and Sons, 454p.
- NASSAU, K. (1994). *Gemstone Enhancement*. London. Butterworths.
- NASSAU, K. and WOOD, D. L. (1973a). Examination of Maxixe type blue and green beryl., *Gems and Gemmology*, 14, 130-133.
- NASSAU, K , PRESSCOTT, B. E. and WOOD, D L., (1976). The deep blue Maxixe type colour centre in beryl. *American Mineralogist*, 61, 100-107.
-
- PANJIKAR, J.(1995). Comparative study of beryls form various Indian occurrences., *Indian Gemmologist*, 1 & 2, 10-15.

- PARKIN, K. M., LOEFFLER, B. M. and BURNS, R. G., (1977). Electron Paramagnetic Resonance, Optical absorption and magnetic circular dichroism studies of CO_3^+ molecular ion in irradiated natural beryl. *Physics and Chemistry of Minerals.*, 1, 301-311.
- PASCOE, E. H. (1950). *A manual of Geology of India and Burma*, Volume 1.
- POLUPANOVA, T. I., PETROV, V. L. KRUZHLOV, A. F, LASKOVEN KOV and NIKIN, V. S. (1985). The thermal stability of beryl, *Geokhimiya*, 1, 121-123.
- POUGH, F. H. (1957). The colouration of gemstones by electron bombardment. *Zeitschrift der deutschen gesellschaft fur Edelsteinkunde*, 71-78.
- POUGH, F. H. and ROGER, T. H. (1945). Experiments in X-ray diffraction of gemstones, *American Mineralogist.*, 32, 31-43.
- PRICE, D. C., VANCE, E. R., SMITH, G., EDGAR, A. and DICKSON, B. L., (1976). Mossbauer effect studies of beryl. *Physics Colloque. C6. Supplement.* 12, 37, 811-817.
- PUTNIS, A. (1992). *Introduction to Mineral Sciences.*, Cambridge University Press, 81-120.
- ROEDDER, E. (1984). *Fluid Inclusion.*, Reviews in Mineralogy, 12., Mineralogical society of America., 584p.
- ROSSMAN, G. R. (1988). Optical Spectroscopy., In *Spectroscopic methods in Geology and Mineralogy.*, (F. C. Hawthorne, ed.) Reviews in Mineralogy, 18, Mineralogical Society of America., 207-254.
- ROSSMAN, G. R. (1988). Vibrational spectroscopy; in *Spectroscopic methods in Mineralogy and Geology* (F. C. Hawthorne, ed.), Reviews in Mineralogy, 18, Mineralogical Society of America, Washington D. C., 193-204.
- ROY, B. C. (1955). Emerald deposits in Mewar and Ajmer Merwar. *Records of the Geological Survey of India*, 86, 377-401.
- SAMOILOVICH, M. I., TSINOBER, L. I. and DUNN-BARKOVSKII., (1971). Nature of colouring in Iron containing beryl. *Soviet Physics Crystallographica.*, 16, 147-150.
- SANDERS, I. S. and DOFF, D. H., (1991). A deep blue beryl from SE Ireland, *Canadian Mineralogist*, 55, 167-172

- SCALLER, W. T, STEVENS, R. E and RICHARD, H. (1962). An usual beryl from Arizona, *American Mineralogist*, 672-699.
- SCANDALE, E, LUCCHESI, S. and GRAZIANI, G (1984). Optical anomalies of beryl crystals, *Physics and Chemistry of Minerals*, 11, 60-66.
- SCANDALE, E, SCORADARI, F. and ZARKA, A. (1979). Elucidating micro fault planes and microstructures in natural beryls. *Journal of Applied Crystallography*, 12, 70-77.
- SCHMETZER, K, BERDESINSKI, W. and BANK, H. (1975). Farbveranderung Von edelstein der beryllgrupic. *Zeitschrift der duetschen gemmologisch en Gesellschaft*, 24, 81-87.
- SCMETZER, K. and KIEFERT, L. (1990). Water in beryls, contribution to the separability of natural and synthetic emeralds by infrared spectroscopy., *Journal of Gemmology*, 21, 215-223.
- SERWAY, R. A. and MARSHALL, S. A. (1967). ESR absorption spectra of CO_3^- and CO_3^{2-} molecule - ions in irradiated single crystal calcite., *Journal of Chemical Physics*, 40, 1949-1952.
- SHEPHERD, J. J., RANKIN, A. H. and ALDERTON, D, H, M. (1985). A practical guide to fluid inclusion studies., Chapman and Hall, New York, 239p.
- SHERMAN, D. M. (1987). Molecular orbital theory of metal - metal charge transfer process in Minerals., *Physics and Chemistry of Minerals*, 14, 355 - 363.
- SHERRIF, B. L, GUNDY, H. D, HARTMAN, J. S., HAWTHORNE, F.C. and CERNY, P. (1991). The incorporation of alkalis in beryl : Multinuclear MAS NMR and crystal structure study. *Canadian Mineralogist*, 29, 271-285.
- SINKAKAS, J. and READ, P. G., (1985). *Beryl*. Butterworths Gem Books, London, 401p.
- SINKANKAS, J. (1981). Emerald and other beryls. Chilton Book company, Radnor, Pennsylvania, USA, 665p.
- SMITH, G AND STRENS, R. G. J. (1976). Intervalence transfer absorption in some silicate, oxides and phosphate minerals. In Strens R. G. J. (ed). the *Physics and Chemistry of Minerals and Rocks*. Wiley and Sons, London, New York, 583 - 612

- SMITH, G. (1978). Evidence for absorption by exchange coupled Fe^{2+} - Fe^{3+} pairs in the infrared spectra of minerals., *Physics and Chemistry of Minerals.*, **3**, 375 - 383.
- SRINIVASAN, N R. (1957). A study on the change in the colour of beryl on heating. *Current Science*, **12**, 388-389.
- SUNAGAWA, I. (1962). Mechanism of natural etching of hematite crystals., *American Mineralogist*, **47**, 1332-1345.
- SUNAGAWA, I. (1984). Growth of crystals in nature., *Material Science of Earth Interior* (ed. I. Sunagawa), 63-105.
- TAGORE, S. M. (1879). *Mani Mala or Treatise of Gems.*, Culcutta, Stanhope press, 1046p
- UNDP Technical Report (1983). *Mineral Exploration and Development in Kerala.*, UNDP, New York, 42p.
- WADIA, D. N. (1958). Occurrence of beryllium and zirconium in India. *Proceedings Section on International Conference on peaceful use of Atomic Energy*, Geneva, volume 2.
- WICKERSHEIM, K. A. (1965). Some remarks concerning the spectra of water and hydroxyl groups in beryl., *Journal of Chemical Physics*, **42**, 1463-1649.
- WICKERSHEIM, K. A. and BUCHANAN, R. A. (1959). The near infrared spectra of beryl., *American Mineralogist*, **44**, 440-445.
- WOOD, D. L. and NASSAU, K., (1967). Infrared spectra of foreign molecules in beryl. *Journal of Chemical Physics*, **47**, 2220-2228.
- WOOD, D. L. and NASSAU, K., (1968). The characterisation of beryl and emerald by visible and infrared absorption spectroscopy. *American Mineralogist*, **53**, 777-800.
- YOSHIMURA, J., KOISHI, Y and SUZUKI, C. K. (1985). An X-ray topographic study of the growth textures of natural beryl crystals. *Journal of Crystal Growth*, **73**, 275-288.
- ZIMMERMAN, J. L. (1981). The liberation of H_2O and CO_2 hydrocarbons from corderites, kinetics, structural and petrogenetic implications., *Bull Minerals.*, **104**, 325-338.
-
- Vassilikou - Dova, A. B. (1993). EPR -determined site distribution of low concentration of transition - metal ions in minerals : Review and Predictions., *American Mineralogist*, **78**, 49- 75.
-
- Vassilikou - Dova, A. B. and Lehman, G. (1987). Investigation of minerals by electron paramagnetic resonance., *Fortschr Mineral.*, **65**, 173 - 202.