Chandra Mohan Bhandari

List of Publications

Books Authored

D.M. Rowe and C.M. Bhandari. *Modern Thermoelectrics, Holt Saunders Ltd. (1983)*

C.M. Bhandari and D.M. Rowe. *Thermal Conduction in Semiconductors, Wiley Eastern Ltd. (1988)*

C.M. Bhandari. *Nothing But All: An enquiry into the meaning and implications of Science, Kitab Mahal, Allahabad (1998)*

Contributed Chapters

3 Review Chapters contributed in the *Handbook of Thermoelectrics* (ed. D.M. Rowe), CRC Press Inc., 1995.

Titles of chapters included:

- Thermoelectric Transport Theory
- Optimisation of Carrier Concentration
- Minimisation of Thermal Conductivity

Review Papers **(with D.M. Rowe as co-author)**

Germanium-silicon alloys as high temperature thermoelectric materials Contemporary Physics, Vol. 21, 219-242 (1960)

Preparation and thermal conductivity of doped semiconductors Prog. Cryst. Growth and Char. 13, 233 (1986)

A review of Lead Telluride technology at UWIST In *Proceedings of the Sixth International Conference on Thermoelectric Energy Conversion, Arlington, U.S.A., p. 43 (1986)*

Publications - Journals

C.M. Bhandari and G.S. Verma. *Thermal Conductivity of Ge-Si alloys at high temperature. Phys. Rev. 138, A2888(1965).*

C.M. Bhandari and G.S. Verma. *Role of longitudinal and transverse phonons in lattice thermal conductivity of GaAs and InSb Phys. Rev. 140, A2101 (1965).*

N.K.S. Gaur, C.M. Bhandari and G.S. Verma. *Temperature dependence of density of states effective mass and electronic and phonon contributions to thermal resistance of dopes Si-Ge alloys at high temperatures Phys. Rev. 152, 781 (1960).*

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N.K.S. Gaur, C.M. Bhandari and G.S. Verma. *Resonance scattering of phonons in GaAs Physica 32, 1048 (1966)*

C.M. Bhandari and G.S. Verma. *Influence of point defects on phonon drag thermoelectric power Il Nuovo Cimento, 47, 129 (1967).*

C.M. Bhandari and G.S. Verma. *Magnon drag thermoelectric power Il Nuovo Cimento, 608, 249 (1967).*

C.M. Bhandari. *Effect of phonon drag on electrical conductivity in Cu and its alloys Physica, 40, 30 (1968).*

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Y.P. Joshi, C.M. Bhandari and G.S. Verma. Role of longitudinal and transverse phonons in GaAs and InSb Phys. Rev. 83, 3574 (1971).

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R.B. Pandey and C.M. Bhandari. A Green function theory of anisotropic ferromagnetics Phys. Stat. Solids (b) 78, 821 (1976).

C.M. Bhandari and D.M. Rowe. Thermal conductivity of highly disordered semiconductor alloys J. Phys. D: Appl. Phys., Vol. 10, L59 (1977).

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C.M. Bhandari. Ge-Si alloys as high temperature thermal materials Vol. 21, 219 (1980).

D.M. Rowe and C.M. Bhandari. Effect of grain size...(?) Applied Energy, Vol. 6, 347 (1980).

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alloying on the lattice thermal conductivity of telluride J. Phys. D: Appl. Phys. 16, L 75 (1983).

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V.K.Agrawal and C.M. Bhandari. Thermal and electrical conductivity of bismuth telluride Indian Journal of Pure and Applied Physics, 1990.

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C.M. Bhandari. (- ln (plots in thermoelectric semiconductors Indian Journal of pure and applied Physics, 37, 434, 1999.

Publications - Conferences

Anil Kumar, C.M. Bhandari and G.S. Verma. Phonon drag thermoelectric power in copper alloys *In* Proceedings of the Nuclear Physics and Solid State Physics Symposium, Bombay-1968, p. 234.

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D.M. Rowe and C.M. Bhandari. Electronic thermal transport in thermoelectric material effect of band nonparabolicity *In* Proc. of the 5th International Conference on Thermoelectric Energy Conversion, Arlington (1984) p 62

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C.M. Bhandari and D.M. Rowe. Minority carrier effects on the thermoelectric figure-of-merit *In* Proceedings of the First European Conference on Thermoelectrics, Cardiff, September, 1987.

D.M. Rowe, C.M. Bhandari, M. Clee, X.Z. Zhang and S. Williams. Preparation and thermoelectric properties of improved PbSnTe alloys *In* Proceedings of First European Conference on thermoelectrics, p 95, 1987.

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Unpublished/Under Preparation Papers

C.M. Bhandari. Thermoelectric behaviour of small gap semiconductors effect of nonparabolic nature of energy bands Unpublished.

C.M. Bhandari and D.M. Rowe. Thermal conductivity of fine-grained sintered anisotropic semiconductors to be published.

C.M. Bhandari and D.M. Rowe. High temperature thermal conductivity of lead telluride Unpublished.

C.M. Bhandari and D.M. Rowe. Analysis of n-type thermoelectric composition of tin, lead and MnTe Unpublished.

C.M. Bhandari. Thermoelectric behaviour of low-dimensional systems Unpublished.

C.M. Bhandari. Tailoring materials for thermoelectric applications under preparation.

C.M. Bhandari. Thermoelectric power in quasi-one-dimensional semiconducting structures unpublished.

C.M. Bhandari. Thermoelectric figure-of-merit and electrical conductivity of bismuth telluride under preparation.

M.P. Singh and C.M. Bhandari. Electronic thermal conductivity and electrical conductivity in one-dimensional systems to be communicated.

M.N. Tripathi and C.M. Bhandari. Thermoelectric behaviour of silicon-germanium alloys under preparation.

Other Publications

25 popular science articles in the magazines Aavishkar *and* Vigyan *(in Hindi).*