Sulfide mineralogy and geochemistry: changing perspectives on key Earth materials

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Sulfide mineralogy was the subject of the first ever 'Reviews in Mineralogy' volume published by the Mineralogical Society of America (Ribbe, 1974) [1] and was soon followed by the more wide-ranging text 'Mineral Chemistry of Metal Sulfides' (Vaughan and Craig, Cambridge Univ Press, 1978) [2]. Together these provided comprehensive coverage of the field, and emphasised the extensive knowledge base in the areas of sulfide crystal structures, crystal chemistry, and phase relations. Both also broke new ground in the discussion of chemical bonding in sulfides. The motivation behind most sulfide studies at this time was their role as the most important group of metalliferous ore minerals.

In the years since these publications, major new areas of interest in sulfide minerals have developed. These have arisen from an appreciation of the importance of sulfides in environmental geochemistry, and involved studies of their surface chemistry, behaviour as fine particulates and 'nanoclusters', role as catalysts, and interactions with biological systems.

Associated with the publication of a new Reviews in Mineralogy and Geochemistry volume on 'Sulfide Mineralogy and Geochemistry', some key examples of these developments in sulfide studies will be reviewed, with particular emphasis on the new areas of surface chemistry, surface reactivity, and behaviour of fine particulate sulfides. Potential new directions for sulfide studies will also be highlighted.

References

[1] Ribbe P.H.(ed.) (1974) Sulfide Mineralogy. Reviews in Mineralogy, vol. 1, 269pp.

[2] Vaughan D.J. and Craig J.R. (1978) Mineral Chemistry of Metal Sulfides. Cambridge Univ Press, Cambridge, England, 500pp.

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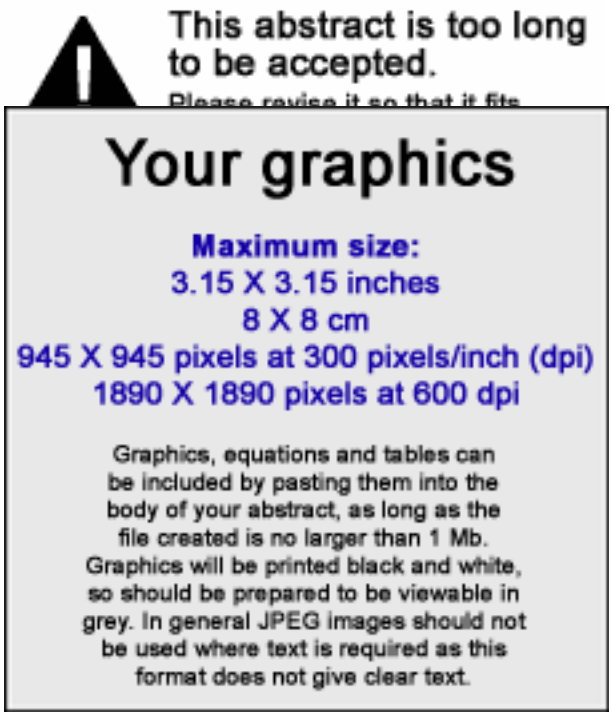

Figures, etc. are optional. This is maximum size.

References

[1] Author A.B. (date) *GCA* **97,** 128-134.

[2] Arhenius X.Y., Steno R.S., Galileo T.U., and da Vinci V.W. (date) *GCA* **103,** 22-33.