

Bernhard Klein

specialty: Comminution, Gravity concentration, Mine/Mill Integration, Acid Rock
Drainage, Rheology

Associate Professor & Department Head

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Additional Responsibilities

Department Head

Faculty Supervisor,

Center for Coal and Mineral Processing (CMP) Laboratory Facility

Director,

Center for Industrial Minerals Innovation (CIMI) - <http://www.cimi.mining.ubc.ca/>
(LNK)

UBC Mining Industrial Liaison

Biography

B.A.Sc., Mining Engineering, University of British Columbia, Canada

Ph.D., Mining Engineering, University of British Columbia, Canada

From a young age I was interested in geology, but was more interested in the production of minerals and chemical processing technologies. Mineral processing provided a means to study and work in both areas and so determined my choice of study at UBC for both an undergraduate degree and PhD degree.

After completing my Ph.D. degree I spent eight years as a consulting process metallurgist. Then Rick Lawrence, Department Head at the time, invited me to apply for an opening on the faculty of what was then Mining and Mineral Processing Engineering. I saw in the invitation two opportunities: one was to expand the type of work I had been doing in consulting; and the other was to contribute to the future of the Department and the industry in a positive way.

On a more personal note, overall, life is about working hard but taking quality time for yourself, family and friends. My idea of play is concentrated in sports. I participate in pick-up soccer games that the members of the Mining Department have held weekly since 1998, which team made up of undergraduates, graduates and some faculty.

Research Interests

- Ultrafine grinding
- High pressure grinding rolls
- Hydraulic transport of non-Newtonian mineral slurries
- Industrial minerals
- Mine-mill integration
- Continuous centrifugal gravity concentration
- Improved technologies for artisanal and small scale gold miners
- Metal leaching from waste rock
- Rheology of mineral suspensions

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17. A. Bamber, B. Klein, M. Stephenson, Mineralogical Evaluation for the Underground Pre-concentration of Massive Sulphide Ores, Minerals Engineering, Submitted, 2007

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14. B. Klein, M. Pawlik, Rheology Modifiers for Mineral Suspensions, *Minerals and Metallurgical Processing*, Vol 22, No. 2, pp 83-88, 2005
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11. B. Klein, R. Hall, M. Scoble, and M. Morin, Total Systems Approach to Design for Underground Mine-mill Integration", *CIM Bulletin*, Vol. 96 No. 1067, January, pp. 65-71. 2003.
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7. Scoble, M., Klein, B., Dunbar, W.S., Mining Waste: Transforming Mining Systems for Waste Management, *Int. J. of Surface Mining, Reclamation and Environment*, Accepted for Publication, June (2002).
6. Dunbar, W.S., Klein, B., Mining, Mineral Processing and Mini-machines, *Canadian Institute of Mining and Metallurgy Bulletin*, Vol. 95, No 1057, pp. 72-76, (2002).
5. Klein, B., Dunbar, W.S., Scoble, M., Integrating Mining and Mineral Processing for Advanced Mining Systems, *Canadian Institute of Mining and Metallurgy Bulletin*, Vol. 95 No 1057, pp. 63-68, (2002).
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1. Klein, B. Partridge, S.J. Laskowski, J.S., Rheology of Unstable Mineral Suspensions, *Coal Preparation*, Vol. 8, 123-134, (1990).

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35. Weatherwax, T., Bamber, A., Klein, B. and Pakalnis, R., Utilization of Coarse Preconcentration Rejects in Underground Backfills, Society of Mining, Metallurgy and Exploration, Annual Meeting, Salt Lake City, 2008.
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 7. Frostad, S. Klein, B., Lawrence, R.W., Kinetic Testing 1. Effects of Protocol Variables on Rates of Weathering, 5th International Conference on Acid Rock Drainage, Denver, Colorado, Vol.1, 641-649 (2000).
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 3. Klein, B., Partridge, S.J. Importance of Particle Size Distribution to the Rheological Properties of Rapidly Settling Magnetite Suspensions, First Inter-American Conference on Rheology, Montreal, 23-29, (1989).
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