



## PROCESS CONTROL GROUP PUBLICATIONS TO DATE

1. **Bouchard, J., Émond, M., Monnapula, R., and Molelekeng, N.** *Asset Optimisation Through Process Control at Xstrata Alloys – Eland Platinum – “Optimal Doesn’t Always Rhyme with Capital”*, proc. 42<sup>nd</sup> Canadian Mineral Processors, Ottawa, January 2010, Paper No. 26, pp. 419-438.
2. **Desbiens, A., del Villar, R., Maldonado, M., (Laval University); and Bouchard, J.,** *Towards the optimization of flotation column operation*, 48th Conference of Metallurgists (COM2009), held in conjunction with Nickel & Cobalt 2009, Sudbury, 23 - 26 Aug. 2009.
3. **Shang, H., (Laurentian University), Nelson, P., and Salt, B.,** *Integrated Modelling of a Smelter Off-gas Cleaning System*, 48th Conference of Metallurgists (COM2009), held in conjunction with Nickel & Cobalt 2009, Sudbury, 23 - 26 Aug. 2009.
4. **Bouchard, J., Émond, M.,** *Who you gonna call? The difference between process control, instrumentation and control systems expertise*, CIM Magazine upfront TECHNOLOGY, August 2009, Vol.4 – No.5, pages 24 and 25.
5. **Núñez, E., MacPherson, G., Graffi, D., and Tuzun, A.,** *Self-optimizing Grinding Control for Maximizing Throughput while Maintaining Cyclone Overflow Specifications*, 41<sup>st</sup> Annual CMP (Canadian Mineral Processors) Conference 2009, Ottawa, Jan. 19-22, 2009, Paper 32, pp. 541-555.
6. **Bartsch, E., Comeau, G., and Hardie, C.,** *Evolution of SAG Mill Process Control at the Xstrata Nickel Raglan Operation*, CIM Magazine Executive Summaries, November 2008, page 102.
7. **Bouchard, J., Desbiens, A., del Villar, R., and Núñez, E.,** *Column Flotation modeling and Control: A Review*, Submitted to Minerals Engineering, 6<sup>th</sup> July 2008.
8. **Bartsch, E., Comeau, G., and Hardie, C.,** *Evolution of SAG Mill Process Control at the Xstrata Nickel Raglan Operation*, 40<sup>th</sup> Annual CMP (Canadian Mineral Processors) 2008, Ottawa, Jan. 22-24, 2008, pp 445-464.
9. **Shang, H., Dillabough, M., Nelson, P., and Salt, B.,** *Dynamic Modelling of an Industrial Smelter Furnace and Converter Off-gas System*, American Journal of Environmental Sciences, vol. 4, number 1, 22-30, 2008.
10. **Desbiens, A., Núñez, E., del Villar, R., Hodouin, D., and Poulin, E.,** *Using Process Control to Increase the Energy Efficiency of Mineral Processing Plants*, International Journal of Power and Energy Systems, Vol. 28, No. 2, 2008, pp 145-152.
11. **Salomon de Friedberg, A., (Hyde, A.),** *Continuous C-Furnace Limestone Injection at the Kidd Smelter*, 10<sup>th</sup> Mitsubishi Family Meeting, Timmins, October 2007.
12. **Nelson, P., Hyde, A., McEwan, M., and Sandoz, D.,** *Integrity Monitoring of Xstrata Copper’s Kidd Metallurgical Division Mitsubishi 3-Line Furnaces Using Multivariate Methods*, 6<sup>th</sup> Copper Conference – Cu2007, Toronto, August 2007, Volume VII Process Control, Optimization, and Six Sigma, pp 229-239.
13. **Kreuh, M., Wraith, A.E., McEwan, M., and Lind, P.,** *Tuyere Pressure Frequency Measurements in a Pierce Smith Converter*, 6<sup>th</sup> Copper Conference – Cu 2007, Toronto, August 2007, Volume VII Process Control, Optimization, and Six Sigma, pp 159-175.
14. **Romero, F., Avila, G., Fester, R., and Yacher, L.,** *Using Multivariable Analysis for Cathode*



- Quality Improvement in C. M. Doña Inés de Collahuasi EW Plant. 6th Copper Conference – Cu2007, Toronto, Canada, August 2007.*
15. **Thwaites, P.E.**, *Process Control in metallurgical plants–From an Xstrata perspective, Plenary (Industrial) Lecture (P3), 12<sup>th</sup> IFAC Symposium on Automation in Mining, Mineral and Metal Processing – IFAC MMM '07, Quebec City, August 2007, Elsevier, Annual Reviews in Control 31 (2007), pp 221-239.*
  16. **Fanas, J., Tiburcio, P., Restituyo, W., Lovett, D., McEwan, M., Sandoz, D., and Ryan, L.A.**, *Automatic Control Development for the Falcondo Ferronickel Electric Arc Smelting Furnaces, 12<sup>th</sup> IFAC Symposium on Automation in Mining, Mineral and Metal Processing – IFAC MMM'07, Quebec City, August 2007, Symposium Preprints, pp 65-70.*
  17. **Shang, H., Thwaites, P.E., Ryan, L.A., and Nelson, P.**, *Comparison of Different Control Methods for an Industrial Nickel Smelter Roaster Off-Gas System, 12<sup>th</sup> IFAC Symposium on Automation in Mining, Mineral and Metal Processing – IFAC MMM '07, Quebec City, August 2007, Symposium Preprints, pp 223-228.*
  18. **Thwaites, P.E.**, *Process Control in Metallurgical Plants – from an Xstrata Perspective, Plenary (Industrial) Lecture (P3), 12<sup>th</sup> IFAC Symposium on Automation in Mining, Mineral and Metal Processing – IFAC MMM'07, Quebec City, August 2007, Symposium Preprints, pp 375-389.*
  19. **Núñez, E., Chirinos, J., del Villar, R., Desbiens, A., and Duchesne, C.**, *Predictive Control of Froth Depth and Air Hold-Up in a Pilot Flotation Column, International Symposium on Application of Computers and Operations Research in the Mineral Industry (APCOM) 2007, Santiago, Chile, pp. 517-524, 2007.*
  20. **Romero, F.**, *Automation, Information & Communication Technologies: Challenges and Opportunities for the Mineral Industry. Collahuasi's Case. Plenary Lecture on 33rd International Symposium on Applications of Computers and Operations Research in the Mineral Industry – APCOM 2007, Santiago, Chile, April 24-27, 2007.*
  21. **King, M.**, *The Evolution of Technology for Extractive Metallurgy over the Last 50 Years – Is the Best Yet to Come?, JOM publication, February 2007.*
  22. **Fester, R., Romero, F., and Acuña, P.**, *Control de Neblina Ácida y Ruido en Nave EW C. M. Doña Inés de Collahuasi. I International Workshop on Process Hydrometallurgy – Hydroprocess 2006, Iquique, Chile, October 11-13, 2006.*
  23. **Bouchard, J., Desbiens, A., del Villar, R., and Chirinos, J.**, *Column Flotation simulation: A Dynamic Framework, International Conference on Mineral Process Modelling, Simulation and Control – MPMSC 2006, Sudbury, Canada, pp. 259-275, 2006.*
  24. **Hanna, J., Upreti, S.R., Lohi, A., and Ein-Mozaffari, F.**, *Minimum Variance Tuning of PI Controllers Using Hybrid Genetic Algorithms, Mineral Process Modelling, Simulation and Control – MPMSC 2006, Laurentian University, Sudbury, June 2006.*
  25. **Nunez, E., Chirinos, J., Desbiens, A., del Villar, R., and Duchesne, C.**, *Multivariable Predictive Control of a Pilot Flotation Column. Part 1: On-Line Sensors for Froth Depth and Air Hold-Up, International Conference on Mineral Process Modelling, Simulation and Control, Sudbury, Canada, pp. 277-290, 2006.*
  26. **Núñez, E., Desbiens, A., del Villar, R., and Duchesne, C.**, *Multivariable Predictive Control of a Pilot Flotation Column. Part 2: Identification and Control, International Conference on Mineral Process Modelling, Simulation and Control, Sudbury, Canada, pp. 291-301, 2006.*
  27. **Nelson, P.R.C., MacGregor, J.F., and Taylor, P.A.**, *The impact of missing measurements on PCA and PLS prediction and monitoring applications, Chemometrics and Intelligent Laboratory Systems, v. 80, n. 1, 1-12, 2006.*
  28. **Bouchard, J., Desbiens, A., and del Villar, R.**, *Optimization-free constrained nonlinear*



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29. **Bouchard, J., Desbiens, A., and del Villar, R.**, *Recent advances in bias and froth depth control in flotation columns*, Minerals Engineering 18, pp. 709-720, 2005.
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  31. **Bouchard, J.**, *Commande automatique de la flottation en colonne : asservissement de la profondeur d'écume et du différentiel d'eau*, M.Sc. Thesis, Université Laval, Québec, 2004.
  32. **Desbiens, A., and Bouchard, J.**, *Constrained Nonlinear Predictive Control Based on IMC-Optimization*, 11th International Federation of Automatic Control (IFAC) Symposium on Automation in Mining, Mineral and Metal Processing, Nancy, France, Thu-C1, 2004.
  33. **Núñez, E.**, *Stratégie de contrôle du circuit de broyage au concentrateur Toquepala au Pérou*, Presented at the Annual Conference of the Canadian Mineral Processor's Northwest Quebec Section, Rouyn-Noranda, Quebec, Canada, September 2004.
  34. **Ryan, L.A., Frias, J., Rodriguez, P., Morrow, A., Boland, M., and Sandoz, D.**, *Falconbridge Dominicana Reduction Shaft Furnace Advanced Control Development*, TMS 2004, Charlotte, NC, March 2004.
  35. **Romero, F., Suarez, M., and Bascur, O.A.**, *Improving metallurgical performance at Collahuasi*. 2004 SME Annual Meeting. Denver, CO, USA.
  36. **Romero, F., Orchard, M., and Yacher, L.**, *Statistical multivariate analysis for improved plant control at C.M. Dona Ines de Collahuasi SCM, Chile*. 2003 SME Annual Meeting, Cincinnati, OH, USA.
  37. **Romero, F.**, *Herramientas de Optimización en Molienda*. Taller de Procesamiento de Minerales 2002, Antofagasta, Chile, October 23-25, 2002.
  38. **Núñez, E.**, *Filosofía de control para molienda y clasificación en la planta concentradora de Toquepala y diseño de una estrategia de control utilizando DCS*, Thesis, Universidad Católica de Santa María, Arequipa, Peru, 2002.
  39. **Suichies, M., Leroux, D., Dechert, C., and Trusiak, A.**, *Model Predictive Control of the Flotation Process*, CMP, Ottawa, On., Canada, January 1999.
  40. **Ryan, L.A., Flament, F., and Desbiens, A.**, *Kidd Creek Mines Automatic Primary Grinding Control*, CMP, Ottawa, On., Canada, January 1996.
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  42. **Thwaites, P.E.**, *Continued development of copper flotation control at the Kidd Creek concentrator*, CIM Bulletin, December 1983, pp. 41-46.
  43. **Thwaites, P.E.**, *Continued development of copper flotation control at the Kidd Creek concentrator*, 15<sup>th</sup> Annual Meeting of the Canadian Mineral Processors (CMP) Division of CIM, Held at the Canada Centre for Mineral and Energy Technology, Energy, Mines and Resources Canada, Ottawa, Jan. 18-20, 1983, Paper 20, pp. 287-316.

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