

Dr. OSVALDO A. BASCUR

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CHEMICAL AND METALLURGICAL ENGINEER

AREAS OF EXPERTISE

Production Planning and Execution Optimization
Integrated Plant Information Systems
Predictive Analytics and Big Data Business Strategies
Digital Strategies for Business Leading to the next Generation Enterprise
Global Collaboration for Sustainability
Process Control and Optimization Process

Business Talent Management
Operational Business Intelligence Analysis
Enterprise Operational Competence Centers
Environmental and Safety Regulations

QUALIFICATIONS AND BACKGROUND

Leader in the industrial implementation of dynamic process modeling, analysis, and optimization of industrial processing operations. More than 10 years of fundamental seminal research, and more than 25 years of pioneering industrial transformational behavior using process control and real time information operational management. The resulting continuous improvement and innovation of industrial processing complexes for operational cost reduction, have been widely disseminated in more than 100 technical papers, and at numerous scientific and industry presentations in all continents.

Results oriented senior executive and leader with extensive experience in leveraging technology to drive organizational performance while combining global expertise in operational systems and asset optimization.

Lead multicultural, cross-functional teams to success through alignment of objectives, communication, and workflow engineering. Strengthens relationships by delivering innovative project and program management and technology solutions aligned with business objectives. Global visionary with seasoned analytical skills in development and execution of operational excellence strategies. Contributed with more than \$100 million in sales to the Oil and Gas Exploration and Refining, Power Generation, Mining and Metals, and Pulp and Paper industries.

Use the value business framework to assist in discovering the gaps and business potential for improvements at operating plants and improve the overall acceptance. Adoption of the latest IoT, BI and Predictive Analytics tools available in the market.

Work with customer top executives and key operational personnel.

Strong believer of the Self Service Business Intelligence tools such as Azure PowerBI and AWS,

Seeq Advanced Analytics, Machine Learning and Six Sigma Methodologies to transform operational data into actionable information for root cause analysis, continuous improvements, innovation and value creation.

Creator of the Dynafloat © , Dynamill II © dynamic simulation flotation and grinding circuit industrial models and Optimill © a steady state closed grinding circuit simulator for fast optimization calculations.

SELECTED ACCOMPLISHMENTS

DESIGNED and IMPLEMENTED mineral and metallurgical mass balances for large metallurgical industrial complexes for metals loss reduction, improved implementation for integration of several mining and metallurgical complex models for metallurgical mass balances and accounting. **RESULTS:** reduce metal losses in tailings or slags, improved recovery and grade, identification of gross measurements and error and improved metal accounting.

DESIGNED and IMPLEMENTED a blue for integration of mining, mineral and metallurgical industrial complexes to gather the data at the original resolution for transformation into actionable information for decision-making. Developed real time costing **best practices** for Mine to Mill and for large industrial complexes. **RESULTS:** Reduce overall operating costs, increase equipment availability for at least 10%, reduce energy costs by 15%, reduce water losses by 10%, increase overall chaired value for sustainable industrial process operations.

REENGINEERED a real time process information system to integrate the mine, mill and utilities, **RESULTS:** Simplified the generation of business metrics to enhance the Mine to Mill dialog by mining and metallurgical engineers. The ability to track the type of ore and mineral ahead of time by historical pattern based modeling enabled the concentrator to reduce power consumption by 3.9%, decrease fresh water consumption by 6.8%, increase ore milling by 4.6% or a NET Profit of US\$ 31.8 million (period: 2009/04/04 to 2009/12/31).

SIMPLIFIED a real time process information system for operation of a large Steel Metallurgical complex by designing a one-unit object model for energy, production, consumables, operational states adaptive reporting, and real time costing. **RESULTS:** The increased visualization of the results by the entire operating team enabled reduction of the overall energy consumption by 10% or US\$ 10 million per year.

INFLUENCED the metallurgical engineering profession to implement real time information systems at the plant and then enterprise wide. **RESULTS:** Generate OSisoft sales and assisted companies to get improved productivity of their engineers and managers locally and anywhere they decide to work. Current yearly OSisoft results revenue of US\$ 19.5 million.

DESIGNED and assisted in the configuration of Sigmafine for integration of mine concentrator and port metallurgical data validation and accounting. **RESULTS:** Savings in the order of US\$ 2.0 million by preventing metal losses.

DESIGNED and IMPLEMENTED a integrated operational management for refinery wide plant information and control systems. Identified benefits, costs, technologies and organization

structure. **RESULTS:** Credits in excess of US\$ 3 million per year were identified at one oil refinery.

TRANSFORMED the metallurgical process analysis into a more scientific approach by implementing continuous improvement and innovation as part of the data to day job.

PROMOTED the collaboration of key players in local plant operations and enterprise manufacturing services to trust themselves and reach operating costs savings never seen before.

RESULTS: A common currency model of plant operations that transcend from remote locations to the enterprise for consistent process analysis, data mining, and model predictive metrics. Increased equipment availability by simplifying interpretation of the conditioned based equipment monitoring. In turn, validation of raw data into operational states decreased valuable product losses, saved energy, water, and reduced environmental impact.

MANAGED a process control and optimization team that provided technical service to four operating properties (a copper concentrator, a gold plant operation, a sulphur mine, and a potash mine). Designed, engineered and implemented an integrated concentrator information system. Integrated database management, data reconciliation, process simulation and mathematical analysis tools for economic performance monitoring and analysis. **RESULTS:** Increased throughput at the concentrator by 25% and reduction of energy consumption by 10%. (This strategy has been vital to get this copper concentrator with a copper grade of 0.3% running at a profit).

DEVELOPED Mining and Metallurgical EYE Opener sessions for customers and university students and faculty. **RESULTS:** Enabled process engineers' renewed enthusiasm for learning. Each time they go back to reengineer their PI System, they are implementing the latest object oriented information management tools developed by process engineers for process engineers.

CONCEPTUALIZED and formulated the Phenomenological Model of Suspension with application to thickening and sedimentation in mining processes. **RESULTS:** Efficient recuperation of water.

CREATED Dynafloat©, the only model capable of solving the effect of froth cleaning and water distribution on cell performance. Dynafloat© is a real time dynamic simulation model able to routinely use information to improve understanding of cell design, reagent effectiveness, advanced control strategy formulation, and flotation bank optimization. **RESULTS:** Successful determination of the exact amount of energy and water needed for optimal recovery and purity leading to conservation of resources and maximization of profits.

DEVELOPED Dynamill II ©, a dynamic model for grinding circuits. Dynamill II © uses a similarity based grinding model and a modified Plit Rao Lynch hydrocyclone model to enable optimal sizing of the grinding circuit components from a dynamic stability perspective. **RESULTS:** Dynamill II © is now available as an iPad application. Today, operators and plant personnel can study equipment design parameters, process disturbance effects, and alternative control strategies by using Dynamill II ©. A companion program Optimill © is steady state closed grinding circuit for fast optimization calculations.

EDUCATION

- 1976 Bachelor of Sciences in Chemical Engineering. Universidad de Concepción, Concepción, Chile.
- 1976 Bachelor of Sciences in Metallurgical Engineering. Universidad de Concepción, Concepción, Chile.
- 1982 Doctor of Philosophy in Metallurgical Engineering – Process Control and Optimization of Metallurgical Processes. University of Utah, Salt Lake City, Utah.

Additional Certificates

- 2019 Digital Strategies for Business Leading the Next-Generation Enterprise, Columbia Business School Executive education.
- 2010 Success Principles Coaching, Jack Canfield.
- 1993 The 7 Habits of Highly Effective People, Stephen Covey.
- 1992 Positive Power and Influence Program. Situation Management Systems, Inc. San Francisco, CA.
- 1992 Engineering and Management Program, University of California, LA.

PROFESSIONAL WORK HISTORY

- 2020 Seeq Advanced Analytics. Consultant. Creation of new strategies for Enterprise deployment of Operational Intelligences, Artificial Intelligence and Predictive Analytics based on time series and transactional business data to bridge the GAP between business production planning and operational systems such as PI System, AspenTech, Honeywell, Wenco, Wonderware, etc. Management Senior Level executive relations with customers in the Basic Industries (Power Generation, Oil and Gas, Pulp and Paper, Mining and Metals, and Chemicals).
- 1994-2019 OSISOFT, Inc, Houston, TX.
Industry Manager (1994-2006), EA Sales (2007-2009), Business Dev (2009-11)
Industry Academia Innovations Principal (2012-Now)
Bascur's deep knowledge in the process industry will add instant credibility to an organization.
His broad experience and proven track record in leading various industrial software initiatives are key assets for this position, as OSISOFT continues to serve as one of the leading software providers in the industry."
Mining industry trailblazer with the formulation of a blueprint for real time enterprise information systems to improve energy and water management.
Implementation of optimizing processes resulting in the conservation of resources and significant profits for plants all over the world. Involved in integrating large competence centers for operations excellence, benchmarking, and energy and water use reduction practices in many world regions.

- 1984-1994 Pennzoil Company, Houston, TX.
Process Management Systems Coordinator, Senior Staff Engineer, (1988-1994).
Manager Process Management and Control Systems, (1986-1988).
Control Systems Supervisor, Duval Corporation, Tucson, AZ (1984-1986).
- 1978-1984 University of Utah, Salt Lake City, UT.
Research Associate Engineer, Research Experimental Station, (1983-1984).
Research Assistant Engineer, Graduate Student, Department of Metallurgical
Engineering, (1978-1982).
- 1975-1977 University of Concepción, Concepción, Chile.
Teaching Assistant and Graduate Student, Dept. Metallurgical Engineering.
- 1975 Codelco, Chuquicamata, Chile.
Engineer Trainee, Oxide Leaching, Solvent Extraction Plant, Refinery.
- 1974 Mantos Blancos, Antofagasta., Chile.
Engineer Trainee, Oxide Leaching and Smelting Plant.

HONORS

- 1981 Phi Kappa Phi Honor Society, and Dean's List.
- 1980 University of Utah Research Committee Fellowship.
- 1978 Organization of American States (OAS) Fellowship.
- 2014 Antoine Gaudin Award by the Society of Mining, Metallurgical and Exploration.

SELECTED INVITED TALKS

- 2020 SME 2020. Digital Transformation lecture for the Mineral Processing Industry,
SME Annual Meeting, Phoenix, AZ.
- 2019 PI World 2019 Gothenberg, Sweden, Key Note in Process Industries Session.
Digital Transformation in the Process Industries: An Ongoing Journey.
- 2019 IFAC MMM 2019, International Federation of Automatic Control invited **Key
Note lecturer**, www.ifac2019MMM.org, Stellebosch, South Africa, August 2019.
Process Analytics: Four Steps to Increasing Metal Recovery 8/28/2019.
- 2019 University of Concepcion Chemical Engineering 100 years Lecture. **Digital
Transformation in the Process Industries.** July 7th
- 2019 Prof. D.W. Fuerstenau 90's Birthday, SME Annual Meeting, Denver, CO.
Metallurgy Analytics: Four Steps towards increasing Metal Recovery.
- 2018 AIChE 2018, Spring Meeting. Big Data and Predictive Analytics, The Digital
Plant Template. **Transforming data into inFORMation** for people and systems.
- 2018 XXIX IMPC 2018 Moscow, Russia. Process Analytics Transforming Mineral
Processing Data into Actional Insights with Barrick Gold.
- 2017 SME Annual Meeting, Big Data Session. Digital Innovation in Modern
Engineering and Operational Excellence Mine To Port Optimization with
ArcelorMittal.
- 2016 University of Utah, College of Mines and Engineering, October 19th, **Digital
Innovation in Modern Engineering and Operational Excellence,**
- 2016 University of Concepcion and University of Santiago, Chile November 9 and 17.
Digital Innovation in Modern Engineering and Operational Excellence.

- 2016 International Seminar on Mineral Processing Technology (MPT 2016), **Key Note Lecturer**, Innovations in Mineral Processing 5-7 January 2016, TCS Sahyadri Park Campurs, Hinjewadi, Pune, India. **Asset and Energy Optimization: Calming Cloud Over Operations. Joint Presentation AngloAmerican Platinum**
- 2016 International Bauxite, Alumina and Aluminium Society IBAAS 2016 Energy Reduction in Aluminium Smelters Symposium, September 26-28, Venue Radisson Blu Hotel and Resort, South Goa, India. Key Note Lecturer, **Enabling Operational Excellence in Metals Processing: New Ways of Using Times Series Big Data.**
- 2015 SME Annual Meeting 2015, **Asset and Energy Optimization: The Cloud Connect Strategy to integrate industrial customers and Equipment services.**
- 2014 IMPC 2014, **Key Note Lecturer, Drastic Energy Reductions in Mineral Processing Plants.** October 20-24, Santiago, Chile.
- 2013 Copper 2013, Sustainability Conference. **Energy Effectiveness and sustainability Management at AngloAmerican Platinum.** Dec. 1-3, Santiago, Chile.
- 2013 Flotation 2013, Capetown, South Africa, Invited Key Note Lecture, **Improving Flotatiom Grade Recovery using Operational data.** Mineral Engineering Conferences. November 2013.
- 2012 University of Utah, College of Mines. **Strategies for improving energy and water specific consumption in mining, mineral, and metal industries.** May 15-17
- 2012 The University of Arizona, Tucson. **Strategies for improving energy and water specific consumption in mining, mineral, and metal industries** July 16-18.
- 2012 Leveraging Information and Communication Technology in Mining and Mineral Processing, **Drastic specific energy and water reductions in mine to mill operations**, International Mineral Processing Congress, XXVI IMPC Delhi, India
- 2011 Symposium on New Technology Implementation in Metallurgical Processes, **Improving Energy/Water Specific Consumption Strategies in Industrial Complexes, Alumnerie Allouette**, COM 2011 Montreal, Canada
- 2011 OSIsoft, **Eye opener Seminar in Mining, Mineral, Metallurgy Real Time Operational Management**, Moscow, Russia.
- 2010 International Mineral Processing Congress, **Mine and Concentrator Dynamic Performance Monitoring and Diagnosis**, Souther Peru Cuajone Example, Brisbane, Australia
- 2009 International Federation of Automatic Control in Mining, Minerals and Metallurgy, IFAC MMM, Collaboration at the Enterprise using Real Time Data Analysis: FROM DATA to ACTION, Viña del Mar, Chile
- 2006 The Minerals, Metals and Materials Society, Sohn, H.Y., International Symposium, Innovations in hydrometallurgical performance management: Heap Leaching, Solvent Extraction and Electrowinning Plants, San Diego, CA.
- 2005 The Australasian Institute of Mining and Metallurgy, Froth Flotation: A Century of Innovation Grade Recovery Optimization Using Data Unification and Real Time Gross Error Detection, Brisbane, Australia

- 2005 The Australasian Institute of Mining and Metallurgy, Froth Flotation: A Century of Innovation Dynamic Flotation Infrastructure Model, Brisbane, Australia
- 2003 IFAC MMM at Baosight, Real Time Information at Iron Steel Metallurgical Complexes examples: Dofasco, Dongbu Steel, Shanghai, China
- 2001 Key Note Speaker at 38 Metallurgisches Seminar GDMB Gessellschaft fur Bergbau, Metallurgie, Rohstoff und Umwelttechnik, Chaustal-Zellerfeld. Germany.
- 1995 Japan Refinery Association. Refinery Information Systems at the Japan Petroleum Institute., Tokyo, Japan
- 1992 National Petroleum Refinery Association. Long Term Knowledge Integration lecture, Washington, D.C, USA.
- 1990 Armco, Chile. Profit Based Grinding Controls. Viña del Mar, Chile.
- 1989 Engineering Science Foundation, Finland. Symposium on World Wide needs in Particulate Systems Modeling and Controls. Helsinki, Finland.
- 1984 Invited to make special presentations to Technical University of Luleo, Sweden and BRGM France on recent advances in grinding and flotation process simulation, controls and concentrator optimization.

SELECTED PAPERS AND PRESENTATIONS

Marketing Digital Transformation In Process Industries Book Trailer

<https://youtu.be/ck3QmNpoiiE>

EMEA PI World. Presentation recording

<https://www.osisoft.com/presentations/welcome-to-the-digital-transformation-in-the-process-industries--an-ongoing-journey/>

Video Lectures: 3 Digital Transformation in the Process Industries Academic Lectures

https://www.youtube.com/playlist?list=PLMcG1Hs2Jbcs391RjEij_AMIMDJ1Jqoha&disable_polymer=true

Bascur, O.A., 2020. “**Digital Transformation in the Process Industries: A Roadmap**”, CRC Press Publishing, Boca Raton, FL. In press. <https://www.amazon.com/-/e/B07XV5HXX9>

Bascur, O.A., Soudek, A., 2019, **Grinding and Flotation Optimization using Operational Intelligence**, Mining, Metallurgy and Exploration, SME, Vol. 36, No.1, Springer, pp 139-149. <https://link.springer.com/article/10.1007/s42461-018-0036-4>

Bascur, O.A., O’Rourke, J., 2019, **Measuring, Managing and Transforming Data for Operational Insights**, Smart Manufacturing Book, Massoud, S., Baldea, M, and Edgar, T. Editors. <https://www.elsevier.com/books/smart-manufacturing/soroush/978-0-12-820027-8>

Bascur, O.A. 2019. “**Process control and operational intelligence in mineral and metallurgical processing.**” In *SME Mineral Processing & Extractive Metallurgy Handbook*, vol. 1, eds. R.C. Dunne, S.K. Kawatra, and C.A. Young. Englewood, CO: Society for Mining, Metallurgy & Exploration. https://books.google.com/books?id=4hKGDwAAQBAJ&q=process+control&source=gbs_word_cloud_r&cad=4#v=snippet&q=process%20control&f=false

Steyn, J., Bascur, O.A. and Gorain, B., 2018, **Metallurgy Analytics: Transforming plant data into actionable insights**, Mining Engineering, SME, CO.

Steyn, J., Bascur, O.A., and Gorain, 2018, **Process Analytics: Transforming Mineral Processing Plant data into Actionable Insights**, XXIX IMPC 2018 Proceedings, Moscow, Russia.

Bascur, O.A. and Soudek, A., 2018, **Grinding Flotation Optimization using Operational Intelligence**, XXIX IMPC 2018 Proceedings, Moscow, Russia

Bascur, O.A. 2018. “A digital plant template for operational insights.” Presented at PI World 2018. <https://pisure.osisoft.com/videos/2503-osisoft-hands-on-lab-a-digital-plant-template-for-operational-insights-an-enterprise-strategy>

Bascur, O.A., 2018, TechCon Lab A Digital Plant Template, PI World 2018, <https://pisure.osisoft.com/videos/2503-osisoft-hands-on-lab-a-digital-plant-template-for-operational-insights-an-enterprise-strategy>

Bascur, O.A. and Soudek, A., 2014, “Strategies for Implementation for Energy Effectiveness and Sustainability; Example AngloAmerican Platinum”, 12th AusIMM Mill Operators’ Conference 2014 Achieving More with Less, AUSIMM The Minerals Institute, Victoria, Australia.

Bascur, O.A. and Aroqui, R., 2014, “Drastic Reductions in Energy and Water Consumption in Large Iron and Steel Metallurgical Complexes”, AIST Computer Applications, May.

Bascur, O.A., Hertler, C., Benavides, N, and Halhead, M. (2013), Drastic Energy and Water Reduction in Large Metallurgical Complexes, 2013 Non Ferrous Metals for Sustainable Developments in our World – Using Resources Efficiently Saving Energy and Protecting the Environment., GMDB GMDB Society of Metallurgists and Miners. 7th European Metallurgical Conference 2013, June 23 to 26, 2013, Weimar, Germany

Bascur, O.A., and Halhead, M., (2013) Enterprise Manufacturing Services to enhance Energy effectiveness and Sustainability Management at AngloPlats, *MMM 2013 International Symposium, International Federation of Automatic Control, IFAC 2013*, 24-27 August. San Diego, CA.

Bascur, O.A., , Hertler, C. and Benavides, N. 2013. Operational business intelligence adaptive analysis for drastic costs deduction of resources in mine and mineral processing. In *Proceedings of the XXV Brazilian National Meeting of Mineral Treatment and Extractive Metallurgy*, October 20 – 24. Goiania, Brazil.

Bascur, O.A., Hertler, C, and Benavides. N.2012. DRASTIC Specific and water Reductions in Mine to Mill Operations, *3rd International Congress on Automation in the Mining Industry, Automining 2012*, 12-19 October, Viña del Mar, Chile, www.gecamin.cl

Bascur, O.A., Hertler, C. and Kolz, R. 2011. Improving energy and water specific consumptions strategies – remote supervision and diagnostics (ENDESA, Enel and Rio Tinto), *8th International Mineral Processing Seminar, in Proceeding of Procemin 2011*, 30 November - 2 December, Santiago, Chile. www.gecamin.cl

Bascur, O.A. and Soudek, A. 2011 Improving flotation performance using PI Asset Framework simple models, *Advances in separation Technologies, Yoon Symposium*, SME, Littleton, CO. www.smenet.org

Bascur, O.A and Soudek, A. 2010. . Real-time integration of Mining and Metallurgical information for efficient use of energy and water - Dynamic Performance Monitoring and Notifications, in *Proceeding of the XXV International Mineral Processing Congress*, Brisbane, Australia: IMPC.

Bascur, O.A., Wong, G. 2011. Sustainability management in metallurgical complexes: case studies, *9th International conference on clean technologies for the Mining Industry*, 10-12 April, Santiago, Chile, Cleanmining 2011, www.gecamin.cl

Bascur, O.A and Soudek, A. 2010. . Real-time integration of Mining and Metallurgical information for efficient use of energy and water - Dynamic Performance Monitoring and Notifications, in *Proceeding of the XXV International Mineral Processing Congress*, Brisbane, Australia: IMPC.

Bascur, O.A., Linares, R. and Schwenzer, G. 2008: Web based real time integration of mining and metallurgical information, *First International Congress on Automation in the Mining Industry, Automining 2008*, Eds., Romero, F. and Levi, F., 23-25 April, Santiago, Chile,

Bascur, O.A., Linares, R. and Yacher, L. 2006. Innovations in Hydrometallurgical performance management: Heap Leaching, Solvent Extraction and electrowinning plants. (Radomiro Tomic, Tesoro, Collahuasi), *Sohn, H.Y International Symposium, Advanced Processing of metals and materials*. Eds. Kongoli, F and Reddy R.G. San Diego, CA, The Minerals, Metals and Materials Society.

Bascur O.A. and Linares, R. 2006. Grade Recovery Optimization: Using Data Unification and Gross Error Detection, *Minerals Engineering*, pp. 696-702

Bascur, O.A. & Kennedy, J.P. 2004. Are You Really Using Your Information to Increase the Effectiveness of Assets and People?, *Plant Operator Forum*, Ed. E.C. Dowling and J.I. Marsden, SME, Littleton, CO, pp.. 47-62. www.smenet.org

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- Bascur, O.A. and Kennedy, J.P. 2004. Improving Metallurgical Performance in Pyrometallurgical Processes, *Journal of Metals*, December, pp.22-32.
- Bascur, O.A. and Soudek, A. 2001. Grade Recovery Optimization using Data Unification and Gross Error Detection, In *Proceedings of the International Federation of Automatic Control IFAC MMM 2001*, Tokyo, Japan, pp. 49-54,
- Bascur, O.A., and Kennedy, J.P. 2001. Real Time Process Management in Iron and Steel Operations, in *Proceeding of the International Federation of Automatic Control*, IFAC MMM 2001 Proceedings, Tokyo, Japan. pp. 307-312.
- Bascur, O.A. and Kennedy, J.P 2000. Mineral Processing Optimization and Collaboration at the Industrial desktop, in *Proceedings of the XXI International Mineral Processing Congress*, Rome, Italy. IMPC.
- Bascur O.A (Ed)., 1998. *Latin American Perspectives: Exploration, Mining, and Processing*. Society for Mining, Metallurgy, and Exploration. Littleton, CO. 403 pp. www.smenet.org
- Bascur, O.A. and Kennedy, J.P 1999, **Measuring, Managing and Maximizing Refinery Performance**, *Advanced Process Control and Information Systems for the Process Industries*, Kane, Les, Editor, Guld Publishing, Houston, TX.
- Bascur, O.A. & Kennedy, J.P. 1996. The industrial desktop – information technologies in metallurgical plants, *Mining Engineering*, September, 1996, www.smenet.org
- Bascur, O.A & Kennedy, J.P, 1995. Measuring, Managing and Maximizing Performance in Industrial Plants, *XIX IMPC Proceedings*, SME, Littleton, CO., www.smenet.org
- Bascur, O.A. 1993. Bridging the Gap between Plant Management and Process Control, *Emerging Computer Techniques for the Mineral Industry*, B.J. Scheiner et.al., Eds, SME, Littleton, Co., pp. 73-81. www.smenet.org
- Bascur, O.A. 1991 Integrated grinding/flotation controls and management. Volume II, *Mineral Processing and Process Control, Cobre91 International Symposium*, Edited by Dobby, G.S., Argyropoulos, S.A. and Rao, S.R., CIM, Ottawa, Canada.pp.411-427.
- Bascur, O.A. 1990, Profit based grinding controls, *Mineral and Metallurgical Processing*, Feb., pp. 9-10.
- Bascur O.A., 1988. A control data framework with distributed intelligence. *Advances in Instrumentation*, International Society of Automation ISA 88, pp 1553-1169.
- Bascur, O.A. Freeh, E and Herbst. 1986. Dynamic integrated grinding circuit model for process optimization, *International Society of Automation Transactions*, Vol. 25, No2, pp. 77-83

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Bascur, O.A. and Herbst, J.A. 1986. Improved thickener performance through the use of an extended Kalman filter, *Design and Installation of Concentration and Dewatering Circuits Symposium*, Mular, A.L. and Anderson, M.A. Eds. SME, Littleton, Co., pp 835-845. www.smenet.org

Bascur, O.A. and Herbst, J.A. 1984, Mineral processing control in the 1980s – Realities and dreams, *In Control 80s Mineral and Metallurgical Processing*, pp 197-215 Edited by J.A., Herbst., D.B., George, and K.V.S, Sastry. New York, NY: SME. www.smenet.org

Bascur, O.A. and Herbst, J.A. 1982. Dynamic modeling of a flotation cell with a view toward automatic control. In *Proceedings of the XIV International Mineral Processing Congress*, Toronto, Canada: IMPC, Canadian Institute of Metallurgy.

Bascur O.A. and Concha, F. 1977. Phenomenological model of suspensions in sedimentation - thickeners, In *Proceedings of the VII International Mineral Processing Congress*, Sao Paulo, Brazil: IMPC.

PROFESSIONAL ORGANIZATIONS

American Institute of Chemical Engineers. AIChE, Big Data and Predictive Analytics

American Iron and Steel Association. AIST

Automation and Computer Application Committee.

Instrument Society of America (ISA), Automatic Control Systems Division,

Director of Mining and Metals Industries Division 2001-2005

Publications Reviews Committee.

Society of Mining and Metallurgical Engineers of AIME (SME).

Process Control and Computer Applications Committee 1997-2005.

International Federation of Automatic Control, IFAC MMM

Workshops Organizing Committee since 2000.

Technical reviewer since 2000. Automining –GECAMIN.

Congress Organizing Committee since 2008

Technical reviewer.

International Mineral Processing Congress. IMPC

Scientific Review Committee since 2000.

PROCEMIN- International Mineral Processing Conference.

Technical Committee since 2012

LANGUAGES

Reads, writes, and speaks English, French, and Spanish.

Basic understanding of Portuguese and Italian.