

TABLE OF CONTENTS

	VII	Chairman's Address
	XI	Foreword
	XIII	AUTOMINING 2008 Organising Committee
	XIII	AUTOMINING 2008 Advisory Committee
	XIV	AUTOMINING 2008 Technical Committee
	XIV	AUTOMINING 2008 Editorial Committee
CHAPTER 01 PROCESS MODELLING	3	Building PCA Models for Operating Diagnosis in an Industrial Rougher Flotation Circuit Luis BERGH and Felipe NIADA
	11	Hybrid Predictive Modelling for The Teniente Converter Max SCHAAF and Aldo CIPRIANO
	21	Mathematical Model for the Determination of the Best Metallurgical Balance under Industrial Conditions Oscar BARRIENTOS
	29	MLA: The New Sherlock Holmes of the Mining and Metallurgical Engineering Industry Paul MIRANDA and Corby ANDERSON
	39	Simulation Model of Ferrocarril Teniente 8 Main Haulage, El Teniente Division, Codelco Chile Juan F. SAN MARTÍN, José M. CASTRO and José F. HENRÍQUEZ
CHAPTER 02 PREDICTIVE MAINTENANCE, FAULT ANALYSIS AND ASSET MANAGEMENT	51	Effective Plant Asset Management: "Expanding the Envelope- Beyond just Valves and Instruments" Mark CHUNG and Sean CAHILL
	57	On-Line Fault Detection on a Pilot Flotation Column using Linear PCA Models Luis BERGH and Sebastián ACOSTA
	67	Performing Condition-Based Maintenance in Real-Time for Improved Equipment Reliability and Continuous Improvement Curt HERTLER and Osvaldo BASCUR
	75	Productivity Improvements through Asset Optimization Technologies Marcos CARRERAS
	85	What's Going on Inside of your Machine? Preventive / Proactive Maintenance Valeria PICONE

CHAPTER 03 SENSORS AND MONITORING SYSTEMS	95	Advanced Wireless Monitoring System for Improving Copper Refinery Control and Maintenance Ari RANTALA, Sangmin Ko and Daniel KIM
	105	Application of Non-Intrusive Sonar Technology to Measurement and Control in Mineral Processing Plants Robert MARON and Christian O'KEEFE
	117	Current Trends in Mineral Processing Instrumentation Sheldon SHEPHERD
	129	Detection in Real Time of Short Circuits, Open Circuits, Anomalies and/or other Events in Electrolytic Cells Ramiro LARA
	135	Mining Safety through Online Monitoring with the Brillouin Optical Time-Domain Reflectometry (BOTDR) Alejandra ÁLVAREZ, Felipe MUJICA and José ROBLES
	143	Online pH and ORP Measurement in Copper Concentrate Plant and Molybdenum Plant of Minera Los Pelambres Sebastián ALFARO and Cristian ARAVENA
	153	Split-Online Digital Image Analysis System to Quantify Particle Size, Shape and Color for Real Time Process Control of Crushed materials Thomas BOBO JR., Cristian RODRÍGUEZ, Sebastián URREJOLA and Luis DELGADO
	163	Superficial Froth Characterization in a Flotation Cell Applying Dynamic Textures Analysis and On-Line Texture Classification Felipe NUÑEZ and Aldo CIPRIANO
	173	System for Detecting and Reporting the Loss of an Adapter from the Dippers of Mining Extraction Machinery Hugo SALAMANCA, Patricio ESCOBAR, Javier ESPINOSA, Juan Pablo SEGURA and Francisco RÍOS
	179	Vehicle Detection System for Mining Equipment (Fleet Safety) Álvaro TAPIA
CHAPTER 04 REAL TIME INFORMATION AND MANAGEMENT SYSTEMS	189	Automated Tracking of Rejected Cathodes and Efficiency Map of Xstrata Lomas Bayas Electrowinning Plant José MIRANDA
	195	Improving Decision Making at Pemex - Mexico through xMII Plant Information System Jesús GARCÍA and Manuel CHÁVEZ
	203	Integrated Platform for Decision Making: Business Management in Real Time Manuel RAMOS and Mario INOSTROZA

	213	Performance Supervision in Complex Systems Luis YACHER, Felipe KRIPPER and Felipe LINEO
	221	Programming and Configuration of Process Control System from Intelligent P&IDs Lautario OSORIO, Alejandro CASTILLO and Richard PINO
	231	Quality Assessment of Permanent Cathodes and Electrolytic Cells in an Electrowinning Process Guillermo VIDAL, Daniel SERPELL and Jaime RAMÍREZ
	239	The Value of Automation applied to Productive Processes in Codelco Francisco AMIAMA , Patricio PERALTA and Pablo CARVAJAL
	253	Tracking Applications in Mining and Mineral Processing - Case Studies Mark OELLERMANN
	263	Upgrading Integration Operational Platform in Codelco - Andina Leonel MUNDACA
	269	Web Based Real Time Integration of Mining and Metallurgical Information Osvaldo BASCUR, Roberto LINARES and Gretchen SCHWENZER
CHAPTER 05 INDUSTRIAL NETWORKING AND COMMUNICATIONS	283	ASingle Infrastructure for Conventional Two - Way Voice and High Performance Data Communication Systems in Underground Mines Paul-André CORBEIL, Richard LARIVIÈRE and Pierre MONTREUIL
	293	CIP - The Protocol Makes the Difference, Technology and Case Study Juan M. Mosso and Sandip CHAUDHARI
	305	Self - Organized Wireless Networks for Measure in Industrial Plants Ricardo CASTAÑEDA, Elkin SUAREZ and Christian CACCIAVILLIANI
	315	Underground Mine Network Communication: New Basis for Process Optimization and Mine Safety Christoph MUELLER
CHAPTER 06 PROCESS CONTROL AND OPTIMISATION	325	Control Room Ergonomics with the Operator in Focus for an Attractive Collaborative Environment Per LUNDMARK
	335	Multivariable Control Application at Codelco Norte's Teniente Converter N° 2 Mallén GAJARDO

	345	Operations Control in Xstrata Technology Tank Houses Cu PHAN and Mark OELLERMANN
	357	Strategy for Maximizing the Tonnage at the Radomiro Tomic Crushing Facility Eduardo ARRATIA and Gastón ROUSSEAU
	363	Traffic Control and Automatic Operation of Transport and Load/Unload System of Trains Rafael GUZMÁN and Norma VARGAS
CHAPTER 07	377	An Innovative Approach using Telerobotics for Intelligent Block Caving Operations Greg BAIDEN and Yassiah BISSIRI
ROBOTICS AND		
EQUIPMENT		
AUTOMATION	387	Assessment Criterion for Automated Laboratory Systems in the Mining Industries Tina KNUDSEN
	397	Automated Delivery System Stage 1: Automated Charging of Underground Production Up - Holes Goeffrey LIGGINS, Baxter SMITH, David RANDALL, Steve THOMSON and JAN PETZOLD
	407	AutoMine®, Automated Production in Action in Codelco El Teniente Mine, Pipa Norte Production Sector Mikko KOIVUNEN and Martín PIÉROLA
	415	Fully Automated Sample Preparation and Analysis in the Mining Industry Skage HEM and Tina KNUDSEN
	423	Robotic Tecnology: a Way Towards an Intelligent Mining Luis Felipe RAMÍREZ, Luis BAEZA, Juan Carlos BARROS, Hugo SALAMANCA and Enrique COOPER
	437	Author's Index