

2009 IEEE-IAS/PCA Cement Industry Conference

**Palm Springs, California, USA
29 May – 09 June 2009**



**IEEE Catalog Number: CFP09CEI-PRT
ISBN: 978-1-4244-3697-2**

**Copyright © 2009 by the Institute of Electrical and Electronic Engineers, Inc
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

******This publication is a representation of what appears in the IEEE Digital Libraries. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP09CEI-PRT
ISBN 13:	978-1-4244-3697-2
ISSN:	1079-9931

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com

TABLE OF CONTENTS

A Model-Based Approach for Clinker Rotary Kiln Monitoring and Instrumentation	1
<i>Kyarash Shahriari, Stanislaw Tarasiewicz.</i>	
Prediction of Cement Strengths to Improve the Bottom Line	12
<i>C. G. Manias</i>	
Cementing the Relationship Between DCS and PLC: A Review of Emerging Trends in Plant Control Systems	32
<i>Moin Shaikh</i>	
A New Method for Blast-Hole Cutting Analysis	44
<i>Rick Ackermann, Eric Empey, Darrell Leetham</i>	
Quarry Material Usage Optimization in Real Time Case Study of a Total Solution for Quarry and Stockpile Optimization	50
<i>Thomas Marx, Leopold Blahous</i>	
Considerations in the Selection and Application of AC and DC Motors for Cement Plants	55
<i>Mark Fanslow, Steve Drzymala</i>	
Mill Spotting Drive Application Experience	77
<i>Douglas S. Phares, Victor Sangoy, David J. Yakel</i>	
Wound Rotor Slip Power Recovery Drive Experience and Applications	86
<i>Barry Dick</i>	
Rotor and Stator Stresses During Starting of Induction Motors Used in Cement Industry Applications	90
<i>Radu Curiac, Sumit Singhal</i>	
Application of AC Induction Motors with Variable Frequency Drives	101
<i>Barton J. Sauer, Patrick A. Brady</i>	
Slag as a Raw Material: Assessing the Economics	111
<i>Thomas Lesniak</i>	
TXI, Oro Grande Plant Modernization: Raw Meal Production with a High Pressure Grinding Roll	121
<i>Bryan Klotz, Courtenay Claussnitzer, Donald Longhurst</i>	
Infrared Monitoring Techniques for Real-Time Monitoring of Rotary Ball Mills	129
<i>Daniel V. Longhurst, Donald Longhurst</i>	
GCC Rio Grande's Greenfield Plant at Pueblo, Colorado	141
<i>José N. Medina, Verne Stuessy, Saúl Alvidrez, Gina Nance, Timothy J. Kovolenko, Steven W. Miller</i>	
Thin-Shelled Concrete Storage Domes and Fluidized Floor Reclaim Systems for Long and Short Term Product Storage at Cement Plants and Terminals	148
<i>Thomas Hedrick, David Bergenstock</i>	
Calciner Burner Design for Alternative Fuels	170
<i>Robert E. Shenk, Lars Skaarup Jensen</i>	
Results of Burning Alternative Fuels	181
<i>Kjell Skjeggerud, Andreas Hand, Norbert Streit</i>	
Technologies for Alternative Fuel Enhancement in Clinker Production	188
<i>Karl Menzel, Uwe Maas, Karl Lampe</i>	

Power Distribution - A Look through the Years	197
<i>John J. Stroker, Susan M. Elser</i>	
Selectivity via the Peak-Current-Let-Through Method: What Traditional Time Current Curves Will Not Tell, but Should.....	205
<i>Marcelo Valdes, Andrew Crabtree, Tom Papallo</i>	
Using Power System Event Data to Reduce Downtime.....	214
<i>Karl Zimmerman, Ryan McDaniel</i>	
A New Application of Waste Heat Recovery Power Generation in Clinker Kiln.....	229
<i>Gaozuo Zhang, Guozhen Zhu, Chunli Wang</i>	
Electrical Hazardous Area Classifications for Cement Plants.....	236
<i>Joseph F. Maida</i>	
Electrical Wind Generation for Cement Manufacturing, a Case Study: Calportland Mojave Plant's 24 MW Wind Project	260
<i>Bruce Shafer</i>	
Development of a Quantitative, Predictive Mercury Model for a Cement Kiln.....	269
<i>Robert J. Schreiber Jr., Charles D. Kellett, Fran Streitman</i>	
An Enterprise Approach to Reliability - Ash Grove's Maintenance Excellence Process (MEP).....	273
<i>Ryan Farr</i>	
From Waste to Efficient Fuel Utilisation.....	281
<i>Wilfred Zieri, Jonathan Forinton</i>	
Author Index	