

# AISE Steel Technology Index for 1999

(formerly *IRON AND STEEL ENGINEER*)

## LIST OF AUTHORS

---

### A

- ANABUKI, Y., TANAKA, K. and FUKUTAKA, Y. Severe defect detection utilizing eddy current distance meter for steel strip, Sept., p 47
- ANGELA, P., PACKIAM, J. and D'AMICO, F. Highly integrated automation system for the new Ipsco mini mill, Aug., p 27
- ARTER, R. K. and SILVERSTEIN, B. R. Analysis techniques and countermeasures for chatter on tandem cold mills and temper mills at LIV Steel, Sept., p 51
- ARTH Jr., W. N., ROBERTSON, J. A. and O'NEAL, E. S. Automatic tagging identification of slabs and billets, Sept., p 60
- AUST, R. P., SCHREFFER, A. and BINDER, A. J. F. Bearing currents A danger to inverter-fed a-c motors?, July, p 47
- AZZAM, M., GINZBURG, V. B., FANCHINI, R. and BAKHTAR, F. A. Selection of optimum mill configurations for cold rolling, Nov., p 34

### B

- BAKHTAR, F. A., AZZAM, M., GINZBURG, V. B. and FANCHINI, R. Selection of optimum mill configurations for cold rolling, Nov., p 34
- BARBON, M., LEE, G., UNSWORTH, D. F. and MOFFAIT, B. M. Automation of Dofasco s No. 3 electrolytic tinning line, Oct., p 35
- BEIRER, G., SOWKA, E., SCHULZE-DIEKHOFF, P., HARDER, J. and MUNSCHER, F. Breakout avoidance system, BASYS, for continuous slab casting, May, p 30
- BELL, S. and SUNG, J. Motor insulation survival with new adjustable frequency drives, Apr., p 60
- BETHEL, N. P. Identifying motor defects through fault zone analysis, Apr., p 64
- BINDER, A. J. F., AUST, R. P. and SCHREFFER, A. Bearing currents A danger to inverter-fed a-c motors?, July, p 47
- BISHOP Jr., R. J., TOTTEN, G. E. and WEBSTER, G. M. Biodegradability and toxicity of a high-performance water-glycol hydraulic fluid, Dec., p 27
- BLISS, B. J. and MARSH, R. C. BOP bottom bubbling practices at National Steel, Dec., p 40
- BLUMENSCHNEIN, C. D. and OLSEN, D. R. New approach for acid recovery, Jan., p 46
- BOGGS, J. A., GIORDANENGO, S. R. and DOYLE, T. J. Improved ladle life at Rouge Steel with automated magnesite veneer, May, p 39
- BONTE, L., DeLANGHE, H., DEPAMELAERE, M. and SPELEERS, B. Installing copper staves and blast furnace operating practice at Sidmar, June, p 43
- BOWMAN, B. Excerpt from The Making, Shaping and Treating of Steel: Electrical considerations for a-c and d-c furnaces, May, p 62
- BRAUTIGAM, D. P. Proactive lubrication maintenance program improves productivity, Dec., p 33
- BRECY, M., TURLEY, J. W. and POLLASTRELLI, A. Control of quarter buckle on sendzimir 20-h mills, Mar., p 35
- BRIGNULL, D. P., STEWART, T., CRISTAN, F. L. and GULAS, M. A. Inspection, analysis, repair and redesign of 32-ton stacker cranes at Dofasco s central shipping complex, Feb., p 62

BURGO, J. A. Excerpt from The Making, Shaping and Treating of Steel: The Manufacture of Pig Iron in the Blast Furnace, Nov., p 72

BUSS, W. E., MERHOF, M. A., PIDUCH, H. G., SCHUMACHER, R. and KOCHANSKI, U. Thyssen Still Otto/PACTI nonrecovery coking system, Jan., p 33

### C

- CAGLIOSTRO, D. J., CHAUBAL, P. C., QUISENBERRY, P. E., WASHO, M. J., MUSKE, K. R. and HOWSE, J. W. Hot blast stove process model and model-based controller, June, p 56
- CAREY, C., CHAPMAN, H. and ERKORU, H. Re-automation of plate mill at BHP Integrated Steel, Port Kembla, Nov., p 27
- CAREY, R. M. Cross-crafting as a reliability strategy, May, p 57
- CARNEVALE, F., HANNAN, P. and TRAUTWIG, H. J. Flatness control and bending systems improve product quality at U.S. Steel Fairless Works, Aug., p 21
- CARTRIGHT, L. M. and WANG, J. Torsional vibration modeling and dynamic simulation of a rolling stand power transmission system, July, p 30
- CASH, G. W., STANLEY, N. M. and LeCLERC, E. A. Hydraulic conversion and modernization of hot strip mill at Gulf States Steel, Mar., p 48
- CASPER, M. F. Eliminating process water discharge to stormwater outfalls at a 75-year old steel mill, Oct., p 28
- CHAPMAN, H., ERKORU, H. and CAREY, C. Re-automation of plate mill at BHP Integrated Steel, Port Kembla, Nov., p 27
- CHATTERJEE, R. K., MATSUO, G. and OKAWA, S. Application of endless bar rolling system at Tokyo Steel, Mar., p 27
- CHAUBAL, P. C., QUISENBERRY, P. E., WASHO, M. J., MUSKE, K. R., HOWSE, J. W. and CAGLIOSTRO, D. J. Hot blast stove process model and model-based controller, June, p 56
- CORBETT, M. J., HASSAN, H. H. and WARBURTON, A. K. Tuscaloosa Steel relocates DRI modules from U.K. to Alabama, June, p 63
- CRISTAN, F. L., GULAS, M. A., BRIGNULL, D. P. and STEWART, T. Inspection, analysis, repair and redesign of 32-ton stacker cranes at Dofasco s central shipping complex, Feb., p 62

### D

- D'AMICO, F., ANGELA, P. and PACKIAM, J. Highly integrated automation system for the new Ipsco mini mill, Aug., p 27
- DeLANGHE, H., DEPAMELAERE, M., SPELEERS, B. and BONTE, L. Installing copper staves and blast furnace operating practice at Sidmar, June, p 43
- DEPAMELAERE, M., SPELEERS, B., BONTE, L. and DeLANGHE, H. Installing copper staves and blast furnace operating practice at Sidmar, June, p 43
- DISMUKES, S. R. New developments in environmental enforcement: U.S. EPA increases enforcement activity, Jan., p 54
- DONKLE III, L. B. Fifth-octave chatter problem solved using vibration analysis, Nov., p 40
- DONOHUE, T. J. and GOODWILL, J. E. Induction heating for the steel industry, Aug., p 51
- DOYLE, T. J., BOGGS, J. A. and GIORDANENGO, S. R. Improved ladle life at Rouge Steel with automated magnesite veneer, May, p 39
- DROINING, W. D. and McKEE, G. R. Collision-free pickup and movement of large objects, Feb., p 75

- DUNCANSON, P. L. and DZERMEJKO, A. J. Upgrading hearth concepts for high-performance blast furnaces, June, p 51
- DUNLOP, T. S. and HARDWICK, B. R. Application of vibration monitoring to cold mill processes, Jan., p 39
- DZERMEJKO, A. J. and DUNCANSON, P. L. Upgrading hearth concepts for high-performance blast furnaces, June, p 51
- DZIERZAWSKI, J. T. Continuous casting of beam blanks, Sept., p 36
- E
- EICHINGER, A., FELBERMAYER, E., STEINHAUSLER, M. and VIEBOCK, H. Design and start-up of a single-strand slab caster at Voest-Alpine Stahl, May, p 25
- ELIOT, S. W. Increasing bearing life on continuous casters, Dec., p 31
- ENRIQUE, E. H. and MOFFATT, B. M. Simplified optimal control for triplate process, Oct., p 40
- ERKORU, H., CAREY, C. and CHAPMAN, H. Re-automation of plate mill at BHP Integrated Steel, Port Kembla, Nov., p 27
- EWING, W. A. and KIVENSON, B. M. Crane wheel and rail interface, May, p 51
- F
- FANCHINI, R., BAKHTAR, F. A., AZZAM, M. and GINZBURG, V. B. Selection of optimum mill configurations for cold rolling, Nov., p 34
- FEINMAN, J. Excerpt from The Making, Shaping and Treating of Steel: Direct Reduction and Smelting Processes, June, p 75
- FELBERMAYER, E., STEINHAUSLER, M., VIEBOCK, H. and EICHINGER, A. Design and start-up of a single-strand slab caster at Voest-Alpine Stahl, May, p 25
- FITZEL, H. O., STEGER, P. L. and GSTOTTENMAYR, A. Environmental engineering in continuous casting, Oct., p 32
- FOLEY, J. D. and GOLDSMITH, D. S. Ivaco Rolling Mills modernization, Apr., p 48
- FONNER, F. E. Recent developments in alternative ironmaking presented at Trinidad Seminar, June, p 68
- FRITZ, D. Latest EAF statistics from IISI, Nov., p 65
- FRITZ, D. World steel leaders convene for IISI meeting, Nov., p 68
- FRITZ, D. M. SMA Annual Members Conference held in Washington, D.C., July, p 58
- FROHLING, P., RIECKMANN, J. and JATTA, J. High tensile, light gage rolling with 20-h reversing cold mills, Mar., p 41
- FUJITA, M., KOJIMA, H., MARUSHIMA, H. and KAWAI, T. Reduced revamp duration at Chiba No. 6 blast furnace, June, p 38
- FUKUTAKA, Y., ANABUKI, Y. and TANAKA, K. Severe defect detection utilizing eddy current distance meter for steel strip, Sept., p 47
- G
- GARVIN, H. F. M. Increasing BOF vessel availability with a mini-cone and water-cooled lip ring, May, p 43
- GATTO, R. P. Practical solutions for effective communication, Oct., p 48
- GINZBURG, V. B., FANCHINI, R., BAKHTAR, F. A. and AZZAM, M. Selection of optimum mill configurations for cold rolling, Nov., p 34
- GIORDANENGO, S. R., DOYLE, T. J. and BOGGS, J. A. Improved ladle life at Rouge Steel with automated magnesite veneer, May, p 39
- GIUNTA, J. S. and STRAUSS, A. D. Evaluation of metallurgical coal blends in the Calderon coking reactor, Jan., p 29
- GIUSTI Jr., L. J., SMITEK, J. W., SPRINGER, T. E., SCHRAMA, R. C., MORRONE, A. S. and RIBAUDO, C. R. Corrosion-resistant antifriction bearings, Dec., p 19
- GOETZE, R. O., RUBY, E. J., TAULBEE, C. R., TAULBEE, C. D. and MORRIS, D. W. Rouge Steel ore bridge: Redesign and replacement of a nonredundant structural member, Feb., p 53
- GOLDSMITH, D. S. and FOLEY, J. D. Ivaco Rolling Mills modernization, Apr., p 48
- GOODWILL, J. E. and DONOHUE, T. J. Induction heating for the steel industry, Aug., p 51
- GRATSON, M. A., NAY, K. G., WASH, S. and SUNDHOLM, J. L. Charging emissions control retrofit to a U-tube system at LIV s Chicago coke plant, Mar., p 53
- GREEN, R. M. Transducerless control of a-c flux vector drives, Apr., p 56
- GSTOTTENMAYR, A., FITZEL, H. O. and STEGER, P. L. Environmental engineering in continuous casting, Oct., p 32
- GULAS, M. A., BRIGNULL, D. P., STEWART, T. and CRISTAN, F. L. Inspection, analysis, repair and redesign of 32-ton stacker cranes at Dofasco s central shipping complex, Feb., p 62
- H
- HANNAN, P., TRAUWIG, H. J. and CARNEVALE, F. Flatness control and bending systems improve product quality at U.S. Steel Fairless Works, Aug., p 21
- HANSEN, G. A., CAGLIOSTRO, D. J., CHAUBAL, P. C., QUISENBERRY, P. E., WASHO, M. J., MUSKE, K. R. and HOWSE, J. W. Hot blast stove process model and model-based controller, June, p 56
- HANSEN, J., ROKOP, N. and LEHTINEN, L. Iron Dynamics process: A new way to make iron, Dec., p 37
- HARDER, J., MUNSCHER, F., BEIRER, G., SOWKA, E. and SCHULZE-DIEKHOF, P. Breakout avoidance system, BASYS, for continuous slab casting, May, p 30
- HARDWICK, B. R. and DUNLOP, T. S. Application of vibration monitoring to cold mill processes, Jan., p 39
- HARDWICK, B. R. A monitoring instrument for the detection and early warning of resonant oscillation of servovalves in hydraulic systems, Nov., p 49
- HARRISON, A. J., KROEBER, W. J. and MAROFSKY, M. A. No. 1 halogen tinning line a-c drive conversion at Bethlehem Steel Sparrows Point, Apr., p 43
- HASSAN, H. H., WARBURTON, A. K. and CORBETT, M. J. Tuscaloosa Steel relocates DRI modules from U.K. to Alabama, June, p 63
- HERBSTRIIT, W. R. and PALUH, J. H. Mill spindle advanced gear design, July, p 44
- HINTON, R. W., SCHACHT, C. A. and WEI, M. L. Estimated safe residual service life of a 29-year old BOF trunion pin, May, p 35
- HIOKA, M., MARKWARD, S. W., LEWIS, J., IMANARI, H. and TSUGENO, M. New process control system in hot strip mill of North Star BHP Steel, Aug., p 32
- HITOTSUMATSU, E., ISHIBASHI, T., WASHIKITA, Y., OKAMOTO, M. and MORI, Y. Modernization of gage control system at Sunitomo Wakayama 5-stand cold mill, Aug., p 46
- HOFMANN, K. and PALZER, O. High-speed roll gap control in rod and bar mills: a challenge for laser diameter gages, Sept., p 42
- HOWSE, J. W., HANSEN, G. A., CAGLIOSTRO, D. J., CHAUBAL, P. C., QUISENBERRY, P. E., WASHO, M. J. and MUSKE, K. R. Hot blast stove process model and model-based controller, June, p 56
- HUNT, K. G. Dofasco hot mill enhances predictability of process

## I

- IMADA, M., UEDE, M. and SHIMADA, T. Simulation of regenerative burner system and its application to walking beam reheat furnaces, Apr., p 68
- IMANARI, H., TSUGENO, M., HIOKA, M., MARKWARD, S. W. and LEWIS, J. New process control system in hot strip mill of North Star BHP Steel, Aug., p 32
- ISHIBASHI, T., WASHIKITA, Y., OKAMOTO, M., MORI, Y. and HITOTSUMATSU, E. Modernization of gage control system at Sumitomo Wakayama 5-strand cold mill, Aug., p 46

## J

- JATTA, J., FRÖHLING, P. and RIECKMANN, J. High tensile, light gage rolling with 20-h reversing cold mills, Mar., p 41

## K

- KAUFMAN, S. G., LYNN, J. W. and MARTIN, V. S. Solving reheat furnace duct cracking and fan rotating stall, July, p 39
- KAWAI, T., FUJITA, M., KOJIMA, H. and MARUSHIMA, H. Reduced revamp duration at Chiba No. 6 blast furnace, June, p 38
- KERN, P., MEHLICH, F. and SCHUMACHER, J. Model-supported flatness control systems for cold rolling mills, Aug., p 38
- KIVENSON, B. M. and EWING, W. A. Crane wheel and rail interface, May, p 51
- KOBAYASHI, N. Development of new mini mill process: The NSR oxygen scrap melting process, Aug., p 61
- KOCHANSKI, U., BUSS, W. E., MERHOF, M. A., PIDUCH, H. G. and SCHUMACHER, R. Thyssen Still Otto/PACTI nonrecovery coking system, Jan., p 33
- KOJIMA, H., MARUSHIMA, H., KAWAI, T. and FUJITA, M. Reduced revamp duration at Chiba No. 6 blast furnace, June, p 38
- KROEBER, W. J., MAROFSKY, M. A. and HARRISON, A. J. No. 1 halogen tinning line a-c drive conversion at Bethlehem Steel Sparrows Point, Apr., p 43

## L

- LaMASIRA, A. Advances in monitoring scrap steel for radioactivity, May, p 48
- LAWRENCE, C. J. and LEE, J. H. Full-spectrum vibration analysis as a preventive maintenance tool, Sept., p 58
- LeCLERC, E. A., CASH, G. W. and STANLEY, N. M. Hydraulic conversion and modernization of hot strip mill at Gulf States Steel, Mar., p 48
- LEE, G., UNSWORTH, D. F., MOFFATT, B. M. and BARBON, M. Automation of Dofasco s No. 3 electrolytic tinning line, Oct., p 35
- LEE, J. H. and LAWRENCE, C. J. Full-spectrum vibration analysis as a preventive maintenance tool, Sept., p 58
- LEHTINEN, L., HANSEN, J. and ROKOP, N. Iron Dynamics process: A new way to make iron, Dec., p 37
- LESTANI, M. and POLONI, A. The endless welding rolling process, Mar., p 31
- LEWIS, J., IMANARI, H., TSUGENO, M., HIOKA, M. and MARKWARD, S. W. New process control system in hot strip mill of North Star BHP Steel, Aug., p 32
- LI, S. and WANG, Z. Present and future status of the Chinese steel industry in the 21st century, Aug., p 56
- LJESSEN, H. P. and WOODS, P. B. Integrated steel mill power production using combustion turbine combined-cycle technology, Apr., p 51
- LYNN, J. W., MARTIN, V. S. and KAUFMAN, S. G. Solving

## M

- MARKWARD, S. W., LEWIS, J., IMANARI, H., TSUGENO, M. and HIOKA, M. New process control system in hot strip mill of North Star BHP Steel, Aug., p 32
- MAROFSKY, M. A., HARRISON, A. J. and KROEBER, W. J. No. 1 halogen tinning line a-c drive conversion at Bethlehem Steel Sparrows Point, Apr., p 43
- MARSH, R. C. and ELISS, B. J. BOP bottom bubbling practices at National Steel, Dec., p 40
- MARTIN, V. S., KAUFMAN, S. G. and LYNN, J. W. Solving reheat furnace duct cracking and fan rotating stall, July, p 39
- MARTIN, V. and OHRT, H. Maintenance, energy and environmental improvements: A unique result of fan tipping, Nov., p 59
- MARUSHIMA, H., KAWAI, T., FUJITA, M. and KOJIMA, H. Reduced revamp duration at Chiba No. 6 blast furnace, June, p 38
- MATSUO, G., OKAWA, S. and CHATTERJEE, R. K. Application of endless bar rolling system at Tokyo Steel, Mar., p 27
- McKEE, G. R. and DROINING, W. D. Collision-free pickup and movement of large objects, Feb., p 75
- McMANUS, G. J. AISI Technology Roadmap: Enhancing the quality of steel, Apr., p 72
- McMANUS, G. J. Are mergers the answer for steel companies? Nov., p 63
- McMANUS, G. J. Are straight-mold casters making a comeback? Aug., p 62
- McMANUS, G. J. Automatic surface inspection of sheet, Dec., p 51
- McMANUS, G. J. Cold mills chart different courses, May, p 55
- McMANUS, G. J. GSI s Essig takes stock of difficult market, July, p 54
- McMANUS, G. J., How Bethlehem gets maximum return from an investment, Sept., p 69
- McMANUS, G. J. How Hylsa makes high carbon DRI, Mar., p 63
- McMANUS, G. J. Is Gallatin Steel turning the corner? Oct., p 44
- McMANUS, G. J. Jetting gas into a metal bath, June, p 70
- McMANUS, G. J. Nucor s Aycock charts a new course, Oct., p 46
- McMANUS, G. J. Speedy advance predicted for high speed steel rolls, Mar., p 59
- McMANUS, G. J. Steel imports: Do we need a new approach? July, p 56
- McMANUS, G. J. The STEELAlliance: Enhancing the image of steel, May, p 54
- McMANUS, G. J. Tom Usher reflects on the world steel situation, Feb., p 79
- McMANUS, G. J. What AK plus Armco equals, Aug., p 60
- McMANUS, G. J. What BarTech and Republic equal, Jan., p 58
- McMANUS, G. J. Why low-value steels are getting another look, Nov., p 70
- MEHLICH, F., SCHUMACHER, J. and KERN, P. Model-supported flatness control systems for cold rolling mills, Aug., p 38
- MELFI, M. J. A-c or d-c: Which motor is right for you? June, p 73
- MERHOF, M. A., PIDUCH, H. G., SCHUMACHER, R., KOCHANSKI, U. and BUSS, W. E. Thyssen Still Otto/PACTI nonrecovery coking system, Jan., p 33
- MILMAN, R. S. Nonconventional crane runway girder reinforcement, Feb., p 68
- MOFFATT, B. M., BARBON, M., LEE, G. and UNSWORTH, D. F. Automation of Dofasco s No. 3 electrolytic tinning line, Oct., p 35
- MOFFATT, B. M. and ENRIQUE, E. H. Simplified optimal control for triplate process, Oct., p 40
- MORALES, J., SANDOVAL, I. and MURILLO, G. Influence of

- process parameters on friction coefficient of high-chromium rolls, Nov., p 46
- MORI, Y., HITOTSUMATSU, E., ISHIBASHI, T., WASHIKITA, Y. and OKAMOTO, M. Modernization of gage control system at Sumitomo Wakayama 5-stand cold mill, Aug., p 46
- MORONEY, R. M. and OLSON, R. C. A 161-Mw cogeneration plant at U.S. Steel, Gary Works, Dec., p 53
- MORRIS, D. W., GOETZE, R. O., RUBY, E. J., TAULBEE, C. R. and TAULBEE, C. D. Rouge Steel ore bridge: Redesign and replacement of a nonredundant structural member, Feb., p 53
- MORRISON, J. W. and PORTER, J. P. BOF trunnion drive shaft testing using ultrasonic multichannel C-scan imaging in real time, May, p 45
- MORRONE, A. S., RIBAUDO, C. R., GIUSTI Jr., L. J., SMITEK, J. W., SPRINGER, T. E. and SCHRAMA, R. C. Corrosion-resistant antifriction bearings, Dec., p 19
- MUELLER, K. R. Practical fluid power unit filtration, Dec., p 24
- MUNSCHER, F., BEIRER, G., SOWKA, E., SCHULZE-DIEKHOF, P. and HARDER, J. Breakout avoidance system, BASYS, for continuous slab casting, May, p 30
- MURILLO, G., MORALES, J. and SANDOVAL, I. Influence of process parameters on friction coefficient of high-chromium rolls, Nov., p 46
- MUSKE, K. R., HOWSE, J. W., HANSEN, G. A., CAGLIOSTRO, D. J., CHAUBAL, P. C., QUISENBERRY, P. E. and WASHO, M. J. Hot blast stove process model and model-based controller, June, p 56
- N
- NAKAMURA, L. M. Establishing an environmental management system using ISO 14001 as a model, Jan., p 51
- NAY, K. G., WASH, S., SUNDHOLM, J. L. and GRATSON, M. A. Charging emissions control retrofit to a U-tube system at LIV s Chicago coke plant, Mar., p 53
- O
- OHRT, H. and MARTIN, V. Maintenance, energy and environmental improvements: A unique result of fan tipping, Nov., p 59
- OLSON, R. C. and MORONEY, R. M. A 161-Mw cogeneration plant at U.S. Steel, Gary Works, Dec., p 53
- OKAMOTO, M., MORI, Y., HITOTSUMATSU, E., ISHIBASHI, T. and WASHIKITA, Y. Modernization of gage control system at Sumitomo Wakayama 5-stand cold mill, Aug., p 46
- OKAWA, S., CHATTERJEE, R. K. and MATSUO, G. Application of endless bar rolling system at Tokyo Steel, Mar., p 27
- OLSEN, D. R. and BLUMENSCHNEIN, C. D. New approach for acid recovery, Jan., p 46
- O NEAL, E. S., ARTH Jr., W. N. and ROBERTSON, J. A. Automatic tagging identification of slabs and billets, Sept., p 60
- P
- PABICH, M. E. and SCHMIDT, A. W. Applications for tong grabs in the steel industry, Feb., p 71
- PACKIAM, J., D AMICO, F. and ANGELA, P. Highly integrated automation system for the new Ipsco mini mill, Aug., p 27
- PALJH, J. H. and HERBSTRIIT, W. R. Mill spindle advanced gear design, July, p 44
- PALZER, O. and HOFMANN, K. High-speed roll gap control in rod and bar mills: a challenge for laser diameter gages, Sept., p 2
- PHILLIPS, M., ROBINSON, J. C. and STOBBE, D. M. Capture and analysis of stress waves provides significant improvement in condition monitoring of critical rotating machinery, July, p 25
- PIDUCH, H. G., SCHUMACHER, R., KOCHANSKI, U., BUSS, W. E. and MERHOF, M. A. Thyssen Still Otto/PACTI nonrecovery cokenaking system, Jan., p 33
- POLLASTRELLI, A., BRECY, M. and TURLEY, J. W. Control of quarter buckle on sendzimir 20-h mills, Mar., p 35
- POLONI, A. and LESTANI, M. The endless welding rolling process, Mar., p 31
- POOLE, T. H. and SLOANE, G. P. U.S. Steel s Edgar Thomson No. 1 blast furnace reline, June, p 35
- PORTER, J. P. and MORRISON, J. W. BOF trunnion drive shaft testing using ultrasonic multichannel C-scan imaging in real time, May, p 45
- POST, R. S. Permanent magnet coupling fundamentals, Nov., p 54
- Q
- QUISENBERRY, P. E., WASHO, M. J., MUSKE, K. R., HOWSE, J. W., CAGLIOSTRO, D. J. and CHAUBAL, P. C. Hot blast stove process model and model-based controller, June, p 56
- R
- RIBAUDO, C. R., GIUSTI Jr., L. J., SMITEK, J. W., SPRINGER, T. E., SCHRAMA, R. C. and MORRONE, A. S. Corrosion-resistant antifriction bearings, Dec., p 19
- RIECKMANN, J., JAITA, J. and FRÖHLING, P. High tensile, light gage rolling with 20-h reversing cold mills, Mar., p 41
- ROBERTSON, J. A., O NEAL, E. S. and ARTH Jr., W. N. Automatic tagging identification of slabs and billets, Sept., p 60
- ROBINSON, J. C., TOBBE, D. M. and PHILLIPS, M. Capture and analysis of stress waves provides significant improvement in condition monitoring of critical rotating machinery, July, p 25
- ROKOP, N., LEHTINEN, L. and HANSEN, J. Iron Dynamics process: A new way to make iron, Dec., p 37
- RUBY, E. J., TAULBEE, C. R., TAULBEE, C. D., MORRIS, D. W. and GOETZE, R. O. Rouge Steel ore bridge: Redesign and replacement of a nonredundant structural member, Feb., p 53
- S
- SAMWAYS, N. L. AK Steel s 1.8 million ton/year carbon and stainless steel cold finishing facility at Rodport, Apr., p 32
- SAMWAYS, N. L. Developments in the North American iron and steel industry 1998, Feb., p 27
- SAMWAYS, N. L. TXI Chaparral Steel: The new Virginia structural mill, Oct., p 21
- SANDOVAL, I., MURILLO, G. and MORALES, J. Influence of process parameters on friction coefficient of high-chromium rolls, Nov., p 46
- SCHACHT, C. A., WEI, M. L. and HINION, R. W. Estimated safe residual service life of a 29-year old BOF trunnion pin, May, p 35
- SCHMIDT, A. W. and PABICH, M. E. Applications for tong grabs in the steel industry, Feb., p 71
- SCHNEIDER, A. and WERNERS, R. Modeling and optimization for a 20-h cold rolling mill, Mar., p 44
- SCHRAMA, R. C., MORRONE, A. S., RIBAUDO, C. R., GIUSTI Jr., L. J., SMITEK, J. W. and SPRINGER, T. E. Corrosion-resistant antifriction bearings, Dec., p 19
- SCHREPPFER, A., AUST, R. P. and BINDER, A. J. F. Bearing currents A danger to inverter-fed a-c motors?, July, p 47
- SCHULZE-DIEKHOF, P., HARDER, J., MUNSCHER, F., BEIRER, G. and SOWKA, E. Breakout avoidance system, BASYS, for continuous slab casting, May, p 30

SCHUMACHER, J., KERN, P. and MEHLICH, F. Model-supported flatness control systems for cold rolling mills, Aug., p 38

SCHUMACHER, R., KOCHANSKI, U., BUSS, W. E., MERHOF, M. A. and PIDUCH, H. G. Thyssen Still Otto/PACTI nonrecovery cokemaking system, Jan., p 33

SHIMADA, T., IMADA, M. and UEDE, M. Simulation of regenerative burner system and its application to walking beam reheat furnaces, Apr., p 68

SILVERSTEIN, B. R. and ARTER, R. K. Analysis techniques and countermeasures for chatter on tandem cold mills and temper mills at LIV Steel, Sept., p 51

SLOANE, G. P. and POOLE, T. H. U.S. Steel s Edgar Thomson No. 1 blast furnace reline, June, p 35

SMITEK, J. W., SPRINGER, T. E., SCHRAMA, R. C., MORRONE, A. S., RIBAUDO, C. R. and GIUST Jr., L. J. Corrosion-resistant antifriction bearings, Dec., p 19

SORTISIO, P. D., TALAAT, T. M., WALSH, M. E. and WISE, D. A. Amanda taphole repair, Sept., p 31

SOWKA, E., SCHULZE-DIEKHOF, P., HARDER, J., MUNSCHER, F. and BEIRER, G. Breakout avoidance system, BASYS, for continuous slab casting, May, p 30

SPELEERS, B., BONTE, L., DeLANGHE, H. and DEPAMELAERE, H. Installing copper staves and blast furnace operating practice at Sidmar, June, p 43

SPRINGER, T. E., SCHRAMA, R. C., MORRONE, A. S., RIBAUDO, C. R., GIUST Jr., L. J. and SMITEK, J. W. Corrosion-resistant antifriction bearings, Dec., p 19

STANLEY, N. M., LeCLERC, E. A. and CASH, G. W. Hydraulic conversion and modernization of hot strip mill at Gulf States Steel, Mar., p 48

STEBER, P. L., GSTOTTENMAYR, A. and FITZEL, H. O. Environmental engineering in continuous casting, Oct., p 32

STEINHAUSLER, M., VIEBOCK, H., EICHINGER, A. and FELBERMAYER, E. Design and start-up of a single-strand slab caster at Voest-Alpine Stahl, May, p 25

STEWART, T., CRISTAN, F. L., GULAS, M. A. and BRIGNULL, D. P. Inspection, analysis, repair and redesign of 32-ton stacker cranes at Dofasco s central shipping complex, Feb., p 62

STOBBE, D. M., PHILLIPS, M. and ROBINSON, J. C. Capture and analysis of stress waves provides significant improvement in condition monitoring of critical rotating machinery, July, p 25

STRAUSS, A. D. and GIUNIA, J. S. Evaluation of metallurgical coal blends in the Calderon coking reactor, Jan., p 29

STUBBLES, J. One hundred years of making, shaping and treating steel, Dec., p 44

SUNDHOLM, J. L., GRATSON, M. A., NAY, K. G. and WASH, S. Charging emissions control retrofit to a U-tube system at LIV s Chicago coke plant, Mar., p 53

SUNG, J. and BELL, S. Motor insulation survival with new adjustable frequency drives, Apr., p 60

## T

TALAAT, T. M., WALSH, M. E., WISE, D. A. and SORTISIO, P. D. Amanda taphole repair, Sept., p 31

TANAKA, K., FUKUTAKA, Y. and ANABUKI, Y. Severe defect detection utilizing eddy current diametereter for steel strip, Sept., p 47

TAULBEE, C. D., MORRIS, D. W., GOETZE, R. O., RUBY, E. J. and TAULBEE, C. R. Rouge Steel ore bridge: Redesign and replacement of a nonredundant structural member, Feb., p 53

TAULBEE, C. R., TAULBEE, C. D., MORRIS, D. W., GOETZE, R. O. and RUBY, E. J. Rouge Steel ore bridge: Redesign and replacement of a nonredundant structural member, Feb., p 53

TOTTEN, G. E., WEBSTER, G. M. and BISHOP Jr., R. J. Biodegradability and toxicity of a high-performance water-gly-

col hydraulic fluid, Dec., p 27

TRAUTWIG, H. J., CARNEVALE, F. and HANNAN, P. Flatness control and bending systems improve product quality at U.S. Steel Fairless Works, Aug., p 21

TSUGENO, M., HIOKA, M., MARKWARD, S. W., LEWIS, J. and IMANARI H. New process control system in hot strip mill of North Star BHP Steel, Aug., p 32

TURLEY, J. W., POLLASTRELLI, A. and BRECY, M. Control of quarter buckle on sendzimir 20-h mills, Mar., p 35

## U

UEDE, M., SHIMADA, T. and IMADA, M. Simulation of regenerative burner system and its application to walking beam reheat furnaces, Apr., p 68

UNSWORTH, D. F., MOFFATT, B. M., BARBON, M. and LEE, G. Automation of Dofasco s No. 3 electrolytic tinning line, Oct., p 35

## V

VIEBOCK, H., EICHINGER, A., FELBERMAYER, E. and STEINHAUSLER, M. Design and start-up of a single-strand slab caster at Voest-Alpine Stahl, May, p 25

## W

WALSH, M. E., WISE, D. A., SORTISIO, P. D. and TALAAT, T. M. Amanda taphole repair, Sept., p 31

WANG, J. and CARIRIGHT, L. M. Torsional vibration modeling and dynamic simulation of a rolling stand power transmission system, July, p 30

WANG, Z. and LI, S. Present and future status of the Chinese steel industry in the 21st century, Aug., p 56

WARBURTON, A. K., CORBETT, M. J. and HASSAN, H. H. Tuscaloosa Steel relocates DRI modules from U.K. to Alabama. June, p 63

WASH, S., SUNDHOLM, J. L., GRATSON, M. A. and NAY, K. G. Charging emissions control retrofit to a U-tube system at LIV s Chicago coke plant, Mar., p 53

WASHIKITA, Y., OKAMOTO, M., MORI, Y., HITOTSUMATSU, E. and ISHIBASHI, T. Modernization of gage control system at Sumitomo Wakayama 5-stand cold mill, Aug., p 46

WASHO, M. J., MUSKE, K. R., HOWSE, J. W., HANSEN, G. A., CAGLIOSTRO, D. J., CHAUBAL, P. C. and QUISENBERRY, P. E. Hot blast stove process model and model-based controller, June, p 56

WEBSTER, G. M., BISHOP Jr., R. J. and TOTTEN, G. E. Biodegradability and toxicity of a high-performance water-glycol hydraulic fluid, Dec., p 27

WEI, M. L., HINTON, R.W. and SCHACHT, C. A. Estimated safe residual service life of a 29-year old BOF trunnion pin, May p 35

WERNERS, R. and SCHNEIDER, A. Modeling and optimization for a 20-h cold rolling mill, Mar., p 44

WESTBROOK, R. W. Heat recovery cokemaking at Sun Coke, Jan., p 25

WILHELM, P. J. The state of the industry, Sept., p 65

WISE, D. A., SORTISIO, P. D., WALSH, M. E. and TALAAT, T. M. Amanda taphole repair, Sept., p 31

WOODS, P. B. and LUESSEN, H. P. Integrated steel mill power production using combustion turbine combined-cycle technology, Apr., p 51