



Pipeline Integrity Assurance: A Practical Approach.

Mo Mohitpour, Alan Murray, Michael McManus, and Iain Colquhoun. ASME Press, Three Park Avenue, New York, NY 10016-5990. 2010. Hardcover. 620 pages. ASME members, \$127; list, \$159. ISBN: 978-0-7918-5956-8.

With the growing prominence of natural gas and the exploitation of remote oil fields, pipelines have never been more important. But pipelines, while generally safe, are vulnerable to both naturally occurring damage, such as corrosion, and to deliberate sabotage. That makes this book by Mohitpour and his colleagues especially timely, since it provides critical information on the integrity and safety of pipeline systems. The text covers a wide range of topics, from establishing a pipeline integrity management program, which is designed to anticipate and prevent outright failure, to such specific subjects as protective coatings and cathodic protection to prevent corrosion.

There is even a chapter on planning and executing repairs on damaged segments of pipeline. The book contains a mix of both introductory material suitable for newcomers to the pipeline industry and descriptions of advanced procedures that should be of interest to seasoned professionals.

DESIGN ENGINEERING MANUAL.

Mike Tooley, ed. Elsevier, The Boulevard, Langford Lane, Kidlington, OX5 1GB, Oxford, United Kingdom. 2010. 610 pages. \$125. ISBN: 978-1-85617-838-9.

Tooley intends *Design Engineering Manual* as a one-stop, concise compendium of design engineering information. The text encompasses a broad array of engineering-related topics—such as design, new materials, ergonomics, reliability and maintainability, and product safety—for applications in electrical, mechanical, civil, and architectural engineering. Chapters are supported with illustrations, case studies, and diagrams. Specific sections are included on design techniques for electronics, mechanics, and plastics. The book is written for engineers, material developers, and graduate students.

THE CORROSION OF COPPER AND ITS ALLOYS: A PRACTICAL GUIDE FOR ENGINEERS. Roger Francis. NACE International, 1440 South Creek Drive, Houston, TX, 77084. 2010. 369 pages. \$99. ISBN: 978-1-57590-225-8.

The ability to master the use of copper and its alloys led to one of humanity's first technological revolutions, and the metal is still widely used in a variety of applications, including electrical conduction, water piping, pumps, and valves. Francis condenses the enormous body of information on the corrosion of copper and its alloys into a single volume intended for engineers trying to select the most appropriate alloy for a specific application. The text examines the merits and properties of commonly used copper alloys. Corrosion resistance is dependent on the film that forms on copper alloys when they are first exposed to the service environment; this book assesses the composition and nature of these films. Most of the chapters focus on different kinds of corrosion, examining how they affect copper alloys and providing tips on how to prevent them. Special attention is paid to underground, atmospheric, and underwater corrosion. The three

most common methods of joining copper alloys—soldering, brazing, and welding—are also described, as well as the specific types of corrosion associated with each.

QUICK DRAW. Richard L. England. CreateSpace, 100 Enterprise Way, Suite A200, Scotts Valley, CA 95066 (www.CreateSpace.com/3468506). 2009. 344 pages. \$14.95. ISBN: 978-1-45369-387-2.

It's not often that Bookshelf includes a work of fiction, but Richard L. England is the pen name of Srinivasan Sampath-Kumar, an ASME member who works in the oil business in Houston. So we thought it might be appropriate to mention. The subtitle of the book is "Global Oil Terrorism." Two companies, Ingram Energy and Narumi Energy, are at loggerheads for a contract to build a refinery in India that will process oil from Russia. You learn at the start who the bad guys are. In his efforts to derail Ingram, Narumi's president, backed by the Yakuza, allies himself with rough sorts ranging from Chechen terrorists who will not hesitate to shoot down an airliner to murderers who put crystallized cobra venom in the sugar. Meanwhile, executives of Ingram, which is based in Houston, are ferried to meetings on CIA aircraft. In various parts of the world, their bodyguards include Gurkha fighters, Indian special forces, the CIA, FBI, and MI5. From time to time, action diverts into glimpses of big-business practices, five-star hotels, and foreign mores. Not to everyone's taste, perhaps, but there was a feeling as we read the story that the author had a lot of fun writing it. A lot of that sense of fun came through.

SAFETY MADE EASY (IT'S NOT POSSIBLE!). Steve Nikkel. Self-published. UCI, PO Box 2079, Wichita, Kansas 67201-2079. 2010. Softcover. 54 pages. \$15.99. ISBN 978-0-557-33610-4.

Steve Nikkel's premise is that safety on the job takes hard work. It starts with top management. Leaders of companies, he

says, must take the issue of safety seriously and must see that the message is clearly communicated through all levels of management to the rank and file. If the top level isn't dedicated to maintaining a safe work environment, subordinate employees can't be expected to take the initiative, and many will literally suffer the consequences. Managers must also be eager to hear about safety concerns raised by employees. The author is an industrial development executive for UCI, a heavy construction firm that also does safety consulting. He argues that achieving and maintaining safety in the workplace requires strict discipline in following proper procedures: "Zero injuries requires zero tolerance." It is also an unending process. Physical hazards can be found just about everywhere. "Continuous effort is required to hunt them down and money must be spent to fix them," he says.

PIEZOELECTRIC ACTUATORS: CONTROL APPLICATIONS OF SMART MATERIALS. Seung-Bok Choi and Young-Min Han. CRC Press, Taylor & Francis Group, 6000 Broken Sound Parkway NW, Suite 300, Boca Raton, FL 33487-2742. 2010. 255 pages. \$139.95. ISBN 978-1-439818084.

While smart materials are being successfully integrated into many engineering applications, Choi and Han claim that their full potential has yet to be realized. Based on the authors' latest research, *Piezoelectric Actuators* provides a professional reference on the use of smart material actuators and sensors integrated with piezoelectric materials. It is suitable for both graduate students studying control methodology and professional engineers. The eight chapters offer a balance of theory and application, covering topics such as control strategies, vibration control, piezoelectric shunt technology, control of flexible robotic manipulators, and applications to both fine motion and hydraulic control systems. The text is succinct and organized, and supported by a multitude of equations and diagrams.