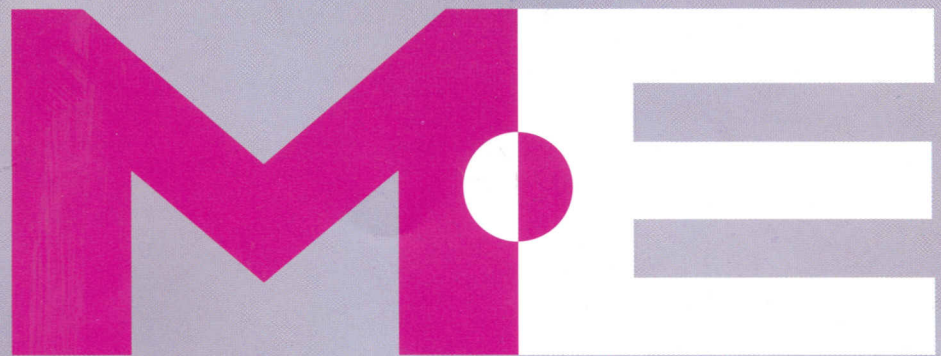




MATERIALS EVALUATION

JANUARY 2012

VOL. 70 • NO. 1

PROMOTING THE PROFESSION
AND TECHNOLOGIES OF NDT

TECHNICAL FOCUS

PREDICTIVE MAINTENANCE

Lube Oil Analysis

Signal Processing

UT Condition Monitoring

Bearing Analysis

THE AMERICAN SOCIETY FOR NONDESTRUCTIVE TESTING

TECHNICAL FOCUS ISSUE: PREDICTIVE MAINTENANCE



TECHNICAL FOCUS LETTER

11 Predictive Maintenance

"I hope you will find new information to 'drop into your toolbox' for future use."

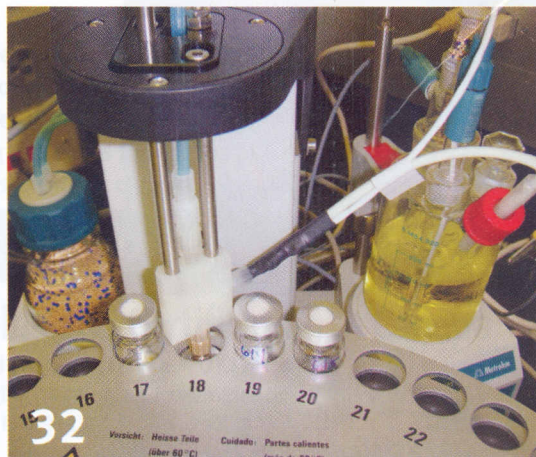
Ken Starry

FEATURE

32 Oil Analysis

Getting the Most from Lube Oil Analysis: Basics of Common Oil Analysis Tests and Their Significance

Michael P. Barrett



BACK TO BASICS

41 Signal Analysis

Understanding the Basics of Signal Processing for Insight into How Time Domain Affects Spectral Analysis

Ken Starry

TECHNICAL PAPERS

71 Ultrasonic Condition Monitoring

Alan Bandes

78 Rolling Element Bearing Analysis

Brian P. Graney and Ken Starry



71

ME departments

- 12 Section News
- 13 Society Notes
- 18 Awards and Honors
- 22 People
- 23 Society News
- 24 Presidential Profile
- 28 New ASNT Certificate Holders

PERSPECTIVE

9 President's Letter

"if our goal is to raise the bar, then we really need to focus on our training models"

WHAT'S NEW

48 Product Gallery

49 **Spotlight: Vibration Analysis**

51 Industry News

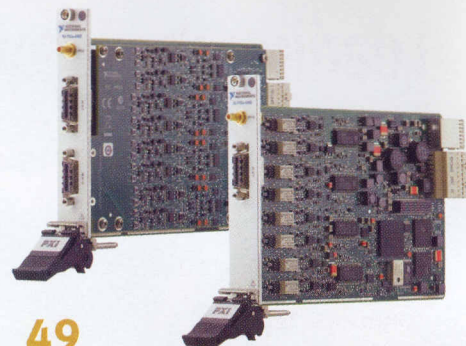
Newport Acquires Ophir, System 21 Overhaul

52 New Media

Olympus NDT Application, The Pressure to Publish

54 New Patents

58 Standards Update



RESOURCES

30 Exam Schedule

53 Contact ASNT

60 Corporate Partners

65 Calendar

87 Employment Service

87 Service Directory

96 Coming Attractions

96 Ad Index



IN THIS ISSUE
Predictive Maintenance

Subscription Questions?

ASNT membership includes a one-year subscription to *Materials Evaluation*. Institutions, or others who wish to have a subscription without becoming an ASNT member, may simply subscribe to the journal through ASNT. To become a member or subscribe to the journal, contact ASNT at (800) 222-2768 or see www.asnt.org/membership/membership.htm.

Back Issues & Article Copies

Back issues of *Materials Evaluation* are available for purchase. See www.asnt.org/shop/periodicals.ihtml for details, or call (800) 222-2768. Copies of individual articles may also be obtained through ASNT: contact the librarian at (800) 222-2768 for more information.

Comments & Suggestions

Letters to the editor are welcome at any time. Letters that are timely and significant may be published in an issue of *Materials Evaluation*. Not all letters are suitable for publication, and ASNT makes no claim regarding publication of a given letter. Letters should be sent to Editor Nathaniel Moes at nmoes@asnt.org.