Industry Forum:

Monitoring, Diagnostics, and Prognostics for Manufacturing Operations

Moving from "React and Repair" to "Predict and Prevent"

May 7 – 11, 2018

National Institute of Standards and Technology (NIST), Gaithersburg, MD

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The National Institute of Standards and Technology (NIST) is hosting an *Industry Forum* to bring Industry, Government, and Academia together to discuss the current trends, successes, challenges, and needs with respect to advanced monitoring, diagnostic, and prognostic technologies to enhance maintenance and control strategies within manufacturing operations. This event will bring together professionals to discuss the current and emerging capabilities and challenges with respect to designing, deploying, verifying, and validating monitoring, diagnostic, and prognostic technologies for manufacturing operations including those involving interconnected, Internet of Things (IoT) technologies.

Participants

Personnel expected to attend the overall forum include manufacturers from large and small to medium-sized enterprises, technology integrators, technology developers (both hardware and software), academia, standards development organizations, and government entities. Personnel interested in presenting and/or serving on a panel must submit an abstract for consideration. Presentations are not required for attendance, but are encouraged to drive discussion. Please see the Abstract Submission Guidance section for additional details.

Attendee Benefits*:*

- Hearing the latest success stories from manufacturers who have reduced their equipment/process downtime, decreased their maintenance costs and defective part counts, increased their productivity and profits, maintained (or improved) their quality, and/or reaped other benefits and savings through implementing advanced monitoring, diagnostic, and prognostic technologies
- Learning about the latest advances at the factory floor level in monitoring, diagnostics, and prognostics, including active research efforts at NIST and other organizations
- Understanding how technological challenges were overcome to implement monitoring, diagnostic, and prognostic technologies
- Networking with other industry professionals who have achieved similar successes, face comparable challenges, and/or can offer solutions
- Providing critical input to an ASME committee focused on producing standards and/or guidelines to support monitoring, diagnostic, and prognostic technologies at the factory floor level

Agenda

The forum will feature a combination of keynote presentations, panel discussions, and interactive Q&A sessions with industry personnel focused on monitoring, diagnostic, and prognostic technologies. Sessions are expected to feature speakers from a wide-range of industries and backgrounds with some specific sessions dedicated to the large and small to medium-sized manufacturing communities, separately. The forum's last day will present an opportunity for all attendees to contribute to an emerging standards effort, led by the American Society of Mechanical Engineers (ASME), that is aimed at producing guidelines to assist manufacturers with the design, implementation, and assessment of monitoring, diagnostic, and prognostic technologies within their own facilities. Industry participation and feedback is critical; the more input the community provides, the more relevant, broadly-applicable, and beneficial the output guidelines will be. The output guidelines are envisioned to increase productivity and efficiency, and decrease equipment/process downtime to ultimately lead to increased profits and decreased costs.

Presentation Abstracts Due – January 10, 2018

Presenters Notified of Acceptance – January 15, 2018

Abstract Submission Guidance

Abstracts should be no more than 500 words and provide sufficient background so the organizing committee may determine both the perspective and the value that the presentation will bring to the forum. All presenters should assume their talks will last for 15-20 minutes. Some abstracts will be selected for keynote presentations which could range from 30-45 minutes.

Participants should select one to four *Topics of Interest* (noted below) that their presentation or panel perspective is best represented. Participants should also indicate if they would like to be considered for a presentation, a panel, or for both.

1. Overall case studies and perspectives – *Large Manufacturers*
2. Overall case studies and perspectives – *Small and Medium-sized Manufacturers*
3. Research case studies – *Academia partnering with Manufacturers to Develop and Test Innovative Technologies or Methods*
4. Design, integration and deployment case studies – *Technology Developers and Integrators*
5. Emerging Technologies and Solutions – *Technology Developers and Integrators*
6. Standards Success Stories – *All*
7. Standards Needs, Wants, and Challenges – *All*
8. Focus Area – Techniques to assess risk within a factory to identify areas of PHM
9. Focus Area – Techniques to determine what data/information needs to be captured
10. Focus Area – Techniques to determine how best to capture desired data
11. Focus Area – Techniques to organize and store data in preparation for diagnostic and prognostic analysis
12. Focus Area – Existing diagnostic and prognostic analysis techniques for manufacturing operations
13. Focus Area – V&V practices for monitoring, diagnostic, and prognostic solutions
14. Focus Area – Techniques to determine flow of data and routing of intelligence (after data has been analyzed to promote effective decision-making)
15. Focus Area – Visualization Tools for monitoring, diagnostics, and prognostics