

AUTOMATE

May 12-15, 2025 | Detroit, MI

NFPA Educational Session: May 14, 2025 | 1:30PM - 2:15PM

Hydraulics and pneumatics have long been key actuation technologies for all kinds of industrial and in-plant applications. Recent advances in the digitalization of fluid power have increased their capabilities and provided for deeper hybridization and integration with electrical and other systems on industrial machines. Please join NFPA at the May 2025 AUTOMATE trade show in Detroit for a track of education programs on this topic. Across three presentations from NFPA members, we'll showcase the application of these new technologies in the in-plant environment, with each engaging the audience in a robust question and answer session about current and future developments.

The confirmed schedule is:

May 14, 2025

1:30-2:15 PM

Emerging Technologies and Architectures of Automated Systems with Integrated Functional Safety

Linda Caron, Global Product Sales Manager, Factory Automation & Machinery Safety, Parker Hannifin

Emerging Technologies have added a degree of sophistication to the plant floor. Collective wiring has migrated to networked communication. Different topologies can be used to connect devices such as IO-Link and the integration of safety circuits both hardwired and over network bring about new challenges. Together we explore the integration of emerging technology and the expansion of functional safety to fluid power components.

2:30-3:15 PM

Pneumatic Operational Improvement via Digitalization

Frank Latino, Product Manager, Festo

Leveraging digital technologies such as digital communications, machine learning, artificial intelligence, Internet of Things, and Edge Computing can improve the operation of pneumatic systems. Specifically, the maintenance process, energy consumption, and machine safety. Machines must be digitally connected to access data from smart devices to achieve this. We will discuss the use of these technologies. The basis will be

on ethernet and IO-Link. We will touch on performance characteristics such as speed, capacity, and security. We will then look at use cases that will provide benefits to machine builders, including networked safety, sustainability, and predictive analysis.

3:30-4:15 PM

The Electrification of Industrial Hydraulics – A Glimpse into the Future (Now)

Christopher Parisse, Senior Controls Product Engineer, Bosch Rexroth

When you think about traditional hydraulic systems, the first thing that may come to mind is a loud energy hogging oily solution. These types of machines are a thing of the past thanks to the harmony of electrification with hydraulic systems. This transition is driven by advancements in hydraulic motion control, variable speed drives and clever system design, enabling the replacement of conventional hydraulic components with electro-hydraulic alternatives. Electrified hydraulic systems offer benefits such as improved energy efficiency, reduced emissions, lower maintenance requirements, and enhanced system controllability. Applications span across industries such as industrial automation, heavy manufacturing, plastics processing, machine tool and more where the demand for cleaner and more efficient power solutions continues to grow. During this presentation we will discuss the concepts that will provide benefit to machine builders, including the integration of VFDs and servo drives in hydraulic applications, a different concept of a hydraulic power unit, and the benefits of power density with hydraulics.

All three sessions are included in the AUTOMATE Conference – an education program held concurrently with the trade show that puts attendees side-by-side with automation experts who know how to implement, optimize and expand automation—giving you insights to put into practice right away. You can get more information and register here:

<https://www.automateshow.com/conference>