

BIODIESEL CONDITIONING WORKSHOP

Deep Dive into B40 & B50 Fuel Polishing Systems

TANGERANG – PT Tekno Fluida Indonesia held a workshop titled "Biodiesel Conditioning: Deep Dive into B40 & B50 Fuel Polishing Systems" on Thursday, November 27, 2025. The workshop took place in two sessions: at the Ibis Style Serpong BSD City Ballroom and at the PT Tekno Fluida Indonesia office.

This workshop was aimed at biodiesel businesses and users to deepen their knowledge regarding the use of renewable fuels. This is in line with government policy through the Ministry of Energy and Mineral Resources (ESDM), which has issued regulations on the use of B40 Biodiesel, as well as the planned implementation of B50 in 2026 for the industrial sector in Indonesia.



Expert Presentation

The event opened with a presentation from Dr.-Ing. Antoni Sutiono, a fluid technology expert with over a decade of experience. He explained the changes in biodiesel content and

characteristics, the resulting technical impacts, and strategies for addressing the challenges of using B40/B50.

Antoni explained that B40/B50 biodiesel is hygroscopic, easily absorbing water from the surrounding environment, is susceptible to oxidation, and is corrosive. He continued, explaining that this presents a challenge for B40/B50 users. If its quality is not maintained, this fuel can damage components and reduce engine performance, and risks voiding the engine warranty if fuel cleanliness standards are not met. "Each engine manufacturer has different fuel cleanliness standards. Therefore, users must maintain biodiesel quality according to the engine manufacturer's requirements to maintain optimal performance and maintain the warranty," Antoni said.

B40/B50 Biodiesel Solution

To address the challenges of B40/B50 biodiesel fuel degradation, Antoni emphasized the importance of implementing a comprehensive mitigation program. This program encompasses three main aspects: engineering, focusing on selecting appropriate materials, designing appropriate storage tanks, and implementing effective filtration systems.

Meanwhile, preventative measures are implemented through a fluid reliability program, starting with selecting quality fuel, using correct filling methods, and routine quality testing. These efforts are reinforced by ongoing maintenance, such as maintaining tank cleanliness, temperature management, and particle and moisture control to maintain optimal fuel quality. Furthermore, good handling practices include microorganism growth management, the use of biocide additives, and the application of enzyme technology.

Technology Demonstration

In the second session at the PT Tekno Fluida Indonesia office, participants witnessed a live demonstration of the company's specially developed fuel polishing system to control B40/B50 degradation caused by particle, water, and microbiological contamination.

Participants also had the opportunity to visit an in-house laboratory to observe the use of digital imaging technology to calculate particle and moisture content in biodiesel. Furthermore, Industrial Internet of Things (IIoT) technology, which enables remote control and real-time system monitoring, was introduced, demonstrating the company's commitment to driving technological innovation in the energy sector.



Organizers' Expectations

Through this workshop, PT Tekno Fluida Indonesia hopes to provide new insights and comprehensive solutions for B40/B50 biodiesel users in Indonesia. This will hopefully better prepare the industry for the future sustainable energy transition.

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