

Helios Tech Solutions Unveils AI System to Detect Adulteration in Coal and Petcoke

AI innovation ensures purity and accuracy in Coal and Petcoke quality checks.



Gurgaon, Haryana Oct 29, 2025 ([IssueWire.com](https://www.issuewire.com)) - In a major step toward improving industrial transparency and sustainability, **Helios Tech Solutions** has launched a cutting-edge **AI-powered system** designed to **detect adulteration in coal and petcoke**. This innovative solution uses **artificial intelligence and machine learning** to ensure that industries receive **authentic, high-quality fuel**, reducing losses, improving efficiency, and supporting cleaner operations.

Coal and petcoke are the backbone fuels for several heavy industries, including cement, steel, power generation, and mining. However, **fuel adulteration** and **inconsistent quality** have long been challenges that affect production performance and environmental output. Traditional testing methods often rely on manual sampling and laboratory analysis, which can be **time-consuming, error-prone, and reactive** rather than preventive.

Recognizing these challenges, **Helios Tech Solutions** has developed a real-time AI system that transforms how industries verify fuel quality and handle their supply chains.

A Smarter Way to Ensure Fuel Purity

The newly developed system by Helios Tech Solutions uses **advanced sensors and AI algorithms** to analyze coal and petcoke samples in real time. It studies multiple parameters such as **moisture, ash, carbon content, and density variations**, instantly identifying if the material has been **mixed, diluted, or tampered with**.

The **AI-driven model** learns from vast datasets collected from different sources and adapts to regional and industrial variations. This allows it to detect even minor deviations that traditional methods might overlook. With its easy-to-use interface and cloud-based dashboard, the system provides **instant alerts and quality reports**, helping industries take quick and data-backed decisions.

Fuel adulteration not only affects production but also harms equipment, increases emissions, and leads to financial losses,” said a spokesperson from **Helios Tech Solutions**. “Our goal is to give industries a simple yet powerful way to identify adulteration early, using AI to make the process fast, transparent, and reliable.

Transforming the Coal Supply Chain

Coal and petcoke supply chains involve multiple stages, from mining and storage to transportation and usage. During these stages, **quality inconsistencies** often arise due to improper handling or intentional mixing of inferior materials. This creates operational inefficiencies and impacts combustion performance.

Helios Tech Solutions’ AI system addresses these issues through **end-to-end monitoring**. By connecting IoT-enabled sensors to weighbridges, conveyors, and sampling points, the system captures live data and analyzes it continuously.

The result? **A transparent, traceable, and data-driven view** of fuel movement and quality something that was nearly impossible with traditional manual checks.

Industries can now track where adulteration might occur, compare batches instantly, and receive **real-time alerts** if fuel quality deviates from the standard. This not only improves supply reliability but also supports **better vendor accountability** and reduces the risk of disputes.

Supporting Cleaner and Greener Operations

Beyond business impact, the AI adulteration detection system by Helios Tech Solutions plays a key role in **environmental sustainability**. Using pure, unadulterated fuel ensures **optimal combustion**, which in turn reduces **air pollution, carbon emissions, and residue generation**.

By integrating **AI-based quality assurance** into their production and logistics processes, companies can also align better with **ESG (Environmental, Social, and Governance) goals**. Ensuring fuel purity means reduced wastage and more efficient energy utilization, which is essential for building a greener industrial future.

The system also supports **automated reporting and compliance tracking**, making it easier for organizations to meet the growing demands of **environmental audits** and **sustainability certifications**.

Innovation at the Core of Helios Tech Solutions

[Helios Tech Solutions](#) has been a consistent innovator in the field of AI automation, industrial monitoring, and smart weighbridge systems. The company has already introduced several [AI-driven unmanned weighbridge](#) and transport management solutions used by industries across mining, cement, FMCG, and logistics.

The new adulteration detection system builds upon this foundation, combining **data analytics, image processing, and machine learning** to deliver actionable insights.

“Our expertise lies in developing AI systems that bring reliability and intelligence to everyday industrial operations,” said **[Surmit Bhui, CTO]**, from Helios Tech Solutions. “With this new solution, we are

helping industries take control of their fuel quality and create a safer, more transparent supply chain.”

Key Features of the AI Adulteration Detection System

- **Real-time Monitoring:** Continuous analysis of coal and petcoke during transport and storage.
- **AI-Based Pattern Recognition:** Detects adulteration through machine learning models trained on thousands of datasets.
- **Cloud-Based Dashboard:** Access live reports, alerts, and trends anytime, anywhere.
- **Integration Ready:** Compatible with weighbridge, ERP, and industrial automation systems.
- **Actionable Insights:** Instant notification when material quality deviates from set parameters.
- **Sustainability Support:** Helps industries maintain compliance with emission and fuel quality standards.

Building Trust Through Data

Fuel adulteration has long been a hidden problem that erodes trust between suppliers and buyers. By enabling **data-driven verification**, Helios Tech Solutions is helping companies establish a **single source of truth** for their raw material quality.

With AI-backed validation, procurement teams can now **negotiate based on real quality data** rather than estimates or manual test reports. This not only strengthens partnerships but also builds a **culture of accountability** throughout the value chain.

Moreover, the system’s **predictive analytics** capabilities can forecast potential adulteration trends over time, helping companies take preventive action before quality issues escalate.

Future Vision

Helios Tech Solutions aims to extend this technology beyond coal and petcoke. The company is already working on expanding its **AI quality detection models** to cover **other industrial materials** such as iron ore, limestone, and clinker.

The broader vision is to create an ecosystem where **AI-based sensors, automation, and data analytics** work together to ensure **purity, precision, and performance** across every stage of production.

“AI is not just about automation—it’s about building trust, improving transparency, and creating smarter industries,” said **[SidakPreet Singh Batra, Founder & CEO]**. “At Helios Tech Solutions, we believe the future of industry lies in intelligent systems that see what humans can’t and act before problems occur.”

About Helios Tech Solutions

Helios Tech Solutions is a leading provider of **AI automation and industrial digitalization solutions**. The company specializes in developing **AI-powered weighbridge automation, unmanned systems, and real-time analytics platforms** that help industries improve safety, accuracy, and efficiency.

With a mission to drive **innovation through intelligence**, Helios Tech Solutions partners with clients across **mining, cement, FMCG, logistics, and energy** sectors to enable data-driven decision-making and sustainable operations.

Conclusion

By launching the AI adulteration detection system, **Helios Tech Solutions** has once again demonstrated its commitment to shaping a **smarter and cleaner industrial future**. With its focus on **accuracy, transparency, and sustainability**, the company continues to redefine how industries manage and maintain the integrity of their most essential resources.

This innovation marks another step forward in Helios' journey to **empower industries with intelligent, automated, and trustworthy solutions**, ensuring that every unit of fuel used is genuine, efficient, and environmentally responsible.

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