# Revolutionizing Petrochemical Analysis:
Online Ultra Deep UV Fluorescence for Aromatics in Wastewater

The energy industry is currently at a pivotal crossroads, moving away from its traditional reliance on fossil fuels. This transformation is particularly noticeable in the Oil & Gas sector, where the demand for crude oil stems from two significant drivers: the demand for petrochemicals and the demand for fuels. As global populations expand, living standards improve, and lifespans increase, the demand for petrochemicals has begun to outpace the demand for fuels. These petrochemical compounds are now indispensable in our daily lives, manifesting in a diverse range of common products like car tires, agrochemicals, textiles, plastics, solar panels, wind farms and numerous other essential items. Therefore, petchem market is expected to reach to$1 trillion by 2032.

At the heart of petrochemical manufacturing are primary building blocks—olefins and aromatics. Ethylene, propylene, benzene, ethylbenzene, toluene, and xylene (collectively known as BTEX) are the main constituents. These components undergo various reactions such as halogenation, dehydrogenation, and polymerization to create monomers and plastic materials, forming the backbone of a vast array of consumer products.

Water plays a pivotal role in the heavy industry manufacturing petrochemicals. Maintaining the quality of discharged and process waters is essential not only for water treatment unit efficiency but also to meet sustainability and environmental compliances. For instance, exposure to styrene can increase the risk of Leukemias, prompting regulatory bodies to set limits. The FDA stipulates that styrene in drinking water should not exceed 0.1 mg/L. To give one example of the common use of styrene, automotive tire market using Styrene-Butadiene-Rubber (SBR) is expected to reach to $180 billion by 2030. with CAGR of 4.3%. In such a rapidly growing market, Deep UV fluorescence stands as a robust solution for measuring single aromatics in water, offering a promising alternative for compliance and sustainability.

Advanced Sensors has deployed its technology in the production of Styrene for trye manufacturing in Southeast Asia successfully, doing a great job in monitoring Styrene levels in outlet of the plant and thus protecting wildlife and the environment in the receiving water.
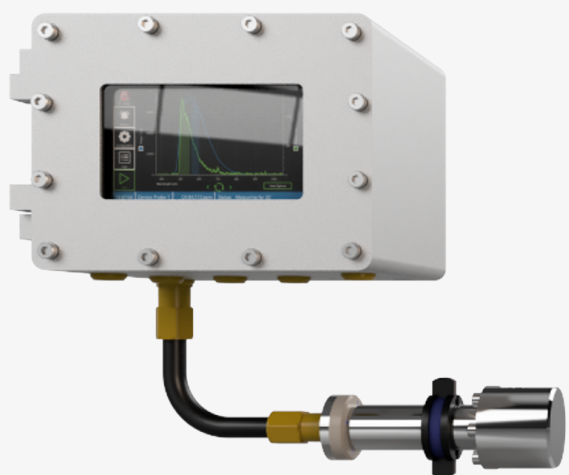
PAC's X-One offers several advantages:

- Ultra Deep UV Fluorescence for BTEX, Light Refined Oils, and Condensates

- Laser Induced Fluorescence for Crude Oils and Heavy Hydrocarbons

- Unbeatable Uptime with Ultrasonic Cleaning Ensuring an Effective Removal of Fouling from the Critical Measurement Window

- Ability to Measure and be Calibrated to Multiple Aromatic Components Such as Styrene, Benzene or Others

- Rich User Experience with Full Suite of Applications for Calibration and Data Review

X-One, with its cutting-edge technology and diverse applications, offers an innovative solution for accurate, efficient, and environmentally compliant petrochemical analysis in water.
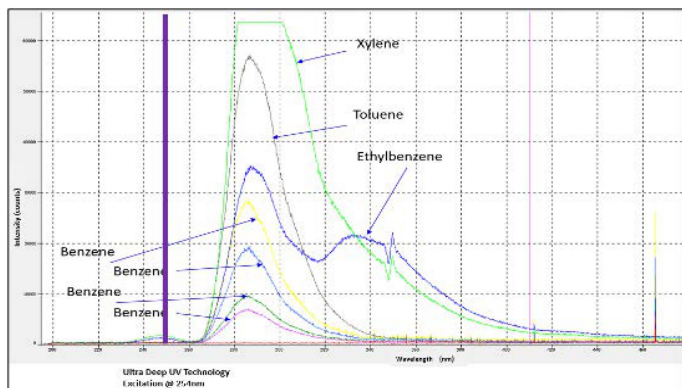
Ultra-deep UV fluorescence capability providing higher sensitivity on BTEX measurements in water
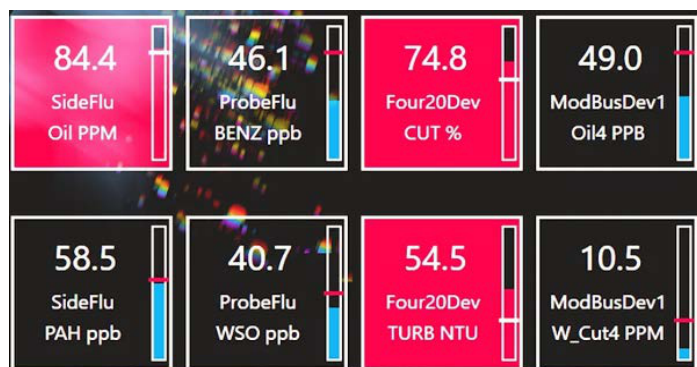
Measure, display, and record multiple parameters of hydrocarbons at the same time

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