



Bosch/Nanalysis Partnership – Summary Brief

Calgary, Alberta
November 6, 2019

[Nanalysis \(TSXV:NSCI\)](#) and [Bosch](#) announced that as of October 23rd, they will jointly develop on-site industrial analyzers based on [Nuclear Magnetic Resonance \(NMR\) technology](#)

To view the full release, click [HERE](#)

Overview

Bosch has partnered with Nanalysis to develop and distribute NMR devices on an industrial scale

The devices will increase the operational efficiency and the decrease downtime of major capital assets

Nanalysis and Bosch are targeting two high-volume industrial applications:

1. On-board fuel analyzers that will help cargo ships comply with changing international bunker fuel regulations¹ and ensure that the engines are functioning optimally with lower sulfur fuel blends
 - The new International Maritime Organization (IMO) fuel standards become effective Jan. 1, 2020 and apply to all ocean-going cargo vessels
 - The alternative to adopting the new fuel blend is multi-million-dollar exhaust scrubber units that costs between \$2-4.5M USD²
 - Engines for these vessels can cost tens of millions of dollars, so excessive wear from new fuels needs to be minimized, while complying with new global maritime emissions standards
 - Fines for breaking the new fuel regulations are expected to be significant and will grow over time
2. Industrial cleaning fluid analyzers that will ensure that fluids used in manufacturing automotive, microprocessor, and other environments are being cleaned and recycled optimally to increase machine/plant productivity and decrease down-time

Each entity would retain ownership of Intellectual Property developed independently as a result of this project (jointly developed IP will be shared)

- Nanalysis will work on the development of the analyzer component(s)
- Bosch will work on the integration of the analyzer(s) into the overall industrial environment(s) by developing integration software connects the analyzer(s) to the operator control panel(s)

Opportunity Size

Cargo Ships - TOP PRIORITY

Bosch has existing relationships with cargo ship makers and operators

These customers have an **urgent demand** for fuel analyzers

The global merchant fleet exceeds 55,000¹

Depending on the size and design, **each ship will require at least two of these devices**

This market is not price sensitive

Device focus is on functionality and sensitivity

Industrial Cleaning Fluids - SECONDARY PRIORITY

Bosch is a major global auto parts supplier and the machines they use to manufacture those auto parts have cleaning fluids running through each of them

Bosch has ~240 manufacturing plants globally

Every plant has many machines that will each require cleaning fluid analyzers

¹ [International Maritime Organization – SOx Regulations](#)

² [Retrofitting SOx Emissions Scrubber – Cost Analysis](#)