

# Will Sixth Wave's fast and accurate breathalyzer revolutionize global pathogenic virus testing?

written by InvestorNews | January 20, 2022

I'm hopeful that we will soon see this whole COVID issue become an endemic as opposed to a pandemic, and life as we know it, can return to something a lot more like it was before this annoying virus became the bane of our existence. Whether continued mutation of the virus allows us to get on with life or not, we need to be better prepared for the future, so we can get a handle on things sooner and keep the economy rolling, keep the kids in school and get rid of this whole division of society over masking and vaccinations. I've suggested in [past articles](#) that, in my opinion, effective, reliable rapid testing could go a long way to resolving this, and any potential future viruses that come along. However, after getting my hands on the current generation of rapid tests and using them a few times to visit family and friends over the Holiday Season, I find it necessary to add one more descriptor – convenient. I actually stopped going out because the thought of jamming that swab up my nose again brings tears to my eyes and a bit of a queasy feeling.

But what if I told you there is a company out there that is on its way to developing a rapid breathalyzer test that can identify COVID and potentially many other viruses. I know it has certainly caught my attention. [Sixth Wave Innovations Inc.](#) (CSE: SIXW | OTCQB: SIXWF) utilizes unique applications of nanotechnology called Molecularly Imprinted Polymers (MIPs) for imprinting, capturing, and releasing substances at the molecular

level. The technology has applications in multiple areas with a current focus on the recovery of gold, explosives detection, metabolite extraction and medical diagnostics for viruses. Sixth Wave can design, develop and commercialize MIP solutions across a broad spectrum of industries. The company is focused on nanotechnology architectures that are highly relevant for the detection and separation of viruses, biogenic amines, and other pathogens, for which the Company has products at various stages of development.

I'll try to briefly explain how this works without getting into too many hard-core science details given it's mostly over my head. Viruses have unique chemical profiles that result in different shape, size, and surface chemistry characteristics. Sixth Wave designs polymerizable ligands specifically to take advantage of the size, shape and surface chemistry of a target virus or target class of virus to achieve selectivity and sensitivity in diagnostic applications.



Source: Sixth Wave Innovations Inc. [Corporate Presentation](#)

They say a picture is worth a thousand words, but I suspect the diagram above would be a lot more than that if I could properly explain it. My simple analogy is that you build a puzzle with one specific piece missing and the only puzzle piece that will fit in that spot is the COVID-19 virus (or whatever virus or family of viruses you selected to fit your polymer puzzle). If you have the correct piece of the puzzle, it will indicate a positive result. If that doesn't make sense to you then you can go to the Company's [website](#) and do some more digging on your own because that's the best I've got.

Beyond the science, here is where Sixth Wave currently stands in its mission to stem the tide of emerging outbreaks quickly in

order to prevent worldwide pandemics in the future. On December 14<sup>th</sup> the Company [announced](#) it had successfully demonstrated selective binding and detection of live SARS-CoV-2 virus in saliva samples using its patent-pending Accelerated Molecularly Imprinted Polymer (AMIPs™) technology. The next and final stage of laboratory-based development is to expand testing to a standardized panel of respiratory viruses to confirm that there is no cross-reactivity (or false positives as near as I can tell). Completion of the cross-reactivity testing is the last scientific development step required to produce specificity data before the Company can begin the process of applying for regulatory approval from government agencies such as the U.S.'s FDA and Health Canada.

Sixth Wave's technology overcomes problems that impact current methods to test for COVID-19 that require using biological materials (antibodies) to detect the virus. PCR, Polymerase Chain Reaction, tests are expensive, generally require unpleasant nasal swabs, and rely on laboratory analysis to return results, and as we've seen of late this has completely overwhelmed the system resulting in several days to get results. Rapid antigen tests are faster but significantly less accurate, are also somewhat unpleasant (at least to me) and diminish in effectiveness as the virus mutates. Compare that to a handheld breathalyzer that could be used multiple times by the same user for easier, less expensive, less wasteful testing. Sixth Wave envisions its unit would have a disposable biosensor (cartridge) that is simply replaced upon a positive detection or after a predetermined sampling time if there is no positive detection.

Personally, I really hope that Sixth Wave can get this technology to the finish line as I think it would be a great benefit to society as a whole. Then there's the potential impact on the share price if they are the ones to come up with the de

facto, go-to gadget for simple, convenient and inexpensive virus testing. With a current market cap of C\$27 million and trading almost at its all-time low share price, this could be quite the game-changer for Sixth Wave Innovations.

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# **Tremendous technologies all based around Molecular Imprinted Polymers have investors riding the Sixth Wave**

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**Sixth Wave continues to achieve outstanding results at detecting COVID-19 as well as the extraction of cannabinoids, gold & lithium**

Innovative methods of detecting and extracting key target materials, such as valuable minerals or even harmful viruses, is a new forefront of nanotechnology.

Today's company is [Sixth Wave Innovations Inc.](#) (CSE: SIXW | OTCQB: SIXWF) ("Sixth Wave"). Sixth Wave is a nanotechnology company that was established in 2013 and has worked on developing commercial products for military and mining

applications. For example, SAFE-T® is a legacy product developed for the US Military for explosives detection, developed with internal resources and R&D funds under multiple contracts with the US Army's Combat Capabilities Development Command Armaments Center (ARDEC) and sold to elements of the US Department of Defense and allied forces.

Since that time Sixth Wave has matured the technology and the applications. Today Sixth Wave's technology has applications across multiple sectors such as mining, medical, defense, and life sciences. Sixth Wave's 3 key products are:

- Accelerated Molecular Imprinted Polymers (AMIPs) – For rapid detection of viruses
- Affinity – For cannabinoid extraction
- IXOS – For gold extraction



### [Source](#)

Sixth Wave uses patented Molecular Imprinted Polymers (MIPs) for imprinting, capturing, and releasing substances at the molecular level.

**MIPs use polymer synthesis techniques to create smart materials with high affinity for a target**



Source: [Sixth Wave Innovation website – About MIPs](#)

The MIP technology can detect and/or extract any number of substances as widespread as the COVID-19 virus, cannabinoids, gold, or lithium.

### **Detection of viruses**

Sixth Wave's Accelerated Molecular Imprinted Polymers (AMIPs) is a Rapid Virus Test for the selective identification of Covid-19 that can give easy-to-read results within minutes. AMIPs will allow for high volume, point-of-use screening in public sector, private industry, hospitals, long-term healthcare facilities, and various forms of public transportation.

On June 10, 2021, Sixth Wave [announced](#) a breakthrough that they had successfully detected the UK and South African Variants of SARS-CoV-2, using two independent techniques: a color-based sensor and independently verified on a Quartz Crystal Microbalance (QCM) based AMIP sensor.

The announcement [stated](#): "The flexibility and robustness of the AMIPs platform was demonstrated again. These preliminary results give evidence to the claims that AMIP technology is resistant to loss of efficacy due to virus mutation and new variants. By imprinting and detecting the whole virus AMIPs can be highly resistant to virus mutation."

### **Purification and extraction of cannabinoids in cannabis**

For cannabis producers, Affinity™ streamlines the traditional processing of THC & CBD. Affinity™ uses MIPs designed to capture and extract cannabinoids to ensure the purest end product and the highest yield.

Sixth Wave recently [announced](#) they had commissioned delivery of its first Affinity™ System. It is estimated that the system will be ready for wet testing at AESI in late September and ready for shipment to the Sixth Wave's proving laboratory in Maryland shortly thereafter.

Sixth Wave plans to deliver [the first commercial Affinity™ System](#) to Oregon-based Green Envy Extracts in Q4, 2021.

## **Extraction of gold from tailings**

Sixth Wave has developed a revolutionary gold-processing system designed for the mining industry. IXOS® is a faster, cleaner and a more cost-effective method of processing and extracting gold with a higher and purer end product than traditional activated carbon processing.

[Announced](#) on May 18, 2021, Sixth Wave executed a non-binding LOI to test Sixth Wave's patented IXOS® purification and extraction polymer on gold bearing tailings samples from the Barry-Hollinger Gold Mine (BHGM) in Eastern Ontario. The news release [stated](#): "It is estimated there are approximately 200,000 tons of tailings on the property which have been indicated to contain up to 16,000 ounces of gold....Sixth Wave will perform a combination of leaching and recovery tests, expected to start in June 2021, barring COVID-19 restrictions. The tailings test protocol could form the foundation for a business model that seeks to identify and recover gold from tailings at other mine sites in the Ontario mining district and throughout the world."

The global implications are enormous given the massive global tailings available from not just gold mines, but other valuable metals.

## **Extraction of lithium from brines such as in the Salton Sea area of California**

Earlier in 2021, Sixth Wave [acquired 100% of Geolithic Corp.](#) (a JV between TriLateral and Sixth Wave). Geolithic was established in 2017 to work on the extraction of lithium from geothermal brines located primarily in the Salton Sea area of California, potentially a huge lithium resource. This has become an important area of interest as it may help the USA and others to be able to extract vast quantities of lithium, which will be needed for this decade's electric vehicle and energy storage

boom.

## **Final remarks**

Sixth Wave has several tremendous technologies all based around its Molecular Imprinted Polymers (MIPs), which can both detect and extract specific target substances.

Key areas of commercialization that are at the beginning are COVID-19 detection, cannabinoids extraction, gold from tailings extraction, and direct lithium extraction. All of these have enormous potential, as well as the potential to expand into related areas.

Sixth Wave Innovation trades on a market cap of just C\$27 million and, in my view, is one of the most exciting listed junior companies on the market today. Be sure to take a deeper look at Sixth Wave.

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# **Sixth Wave's Dr Jon Gluckman on the competitive advantages of Molecular Imprint Polymers for the rapid detection of viruses**

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In a recent InvestorIntel interview, Tracy Weslosky speaks with Dr. Jon Gluckman, President, CEO and Founder of [Sixth Wave](#)



[Innovations Inc.](#) (CSE: SIXW | OTCQB: ATURF) about the application of their patented Molecular Imprint Polymers (#MIPs) technology for the detection of the COVID-19 virus, the flu and virus detection in general.

In this InvestorIntel interview, which may also be viewed on YouTube ([click here to subscribe to the InvestorIntel Channel](#)), Dr. Gluckman went on to say that their patented #MIPs technology can identify molecules and may be used for detection of viruses in general and more specifically for COVID-19. He added, "We are in the phase 2 of our development for a COVID-19 test that would be completely synthetic test based on our molecular imprinted polymer technology." Sixth Wave was recently awarded funding from the Nova Scotia COVID-19 Response Council for the development of its Accelerated Molecularly Imprinted Polymer (AMIPs™) technology for the rapid detection of viruses such as SARS-CoV-2.

Speaking on the advantages of their synthetic test Dr. Gluckman said that the two test currently used for COVID-19 detection uses biological material which is fragile and uses tremendous infrastructure to support growing of the biological materials. He explained that Sixth Wave's technology uses synthetic polymers to detect viruses at a very low cost and allows for extended shelf life, minimal storage and handling requirements, and less sensitivity to temperature and light degradation.

To watch the complete interview, [click here](#)

### **About Sixth Wave**

Sixth Wave is a nanotechnology company with patented technologies that focus on extraction and detection of target substances at the molecular level using highly specialized Molecularly Imprinted Polymers (MIPs). The Company is in the

process of commercial roll out of its Affinity™ cannabinoid purification system, as well as, IXOS®, a line of extraction polymers for the gold mining industry. The Company is in the development stages of a rapid diagnostic test for viruses under the Accelerated MIPs (AMIPS™) label.

Sixth Wave can design, develop and commercialize MIP solutions across a broad spectrum of industries. The company is focused on nanotechnology architectures that are highly relevant for detection and separation of viruses, biogenic amines and other pathogens, for which the Company has products at various stages of development.

To learn more about Sixth Wave Innovations Inc., [click here](#)

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