

# Nanotechnology value hunters look at Sixth Wave Innovations

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After the last few days and weeks, it seems almost pointless talking about any company that is publicly traded as it is probably getting crushed, or if you are lucky, only moderately beaten up. However, in times like this you have to look past what the market is doling out on a day to day basis and think about the bigger picture. Perhaps you don't want to be buying today, trying to catch the proverbial 'falling knife', or maybe we are close to a bottom. I don't have a clue. What I do know is that what has happened year to date is not going to prevent me from buying stocks in the future, so I always want to have a giant 'watch list' that I can prioritize when everything goes on sale. Even though it may seem like this is the sale that never ends.

That's why, when there's a broad market sell off like the one we are currently enduring, it's fun to go looking for stocks that are almost free. In this case I'm talking about a company that is trading at an all time low stock price, below \$0.10/share, and market cap of roughly C\$11 million, both of which suggest there could be potential for plenty of upside should any of its several business lines gain traction. I'm talking about [Sixth Wave Innovations Inc.](#) (CSE: SIXW | OTCQB: SIXWF), 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 a commercial rollout of its [Affinity™ cannabinoid purification system](#), as well as, [IX0S®](#), 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 for which the Company has products at various stages of development.

Given where we currently stand in the pandemic, the name of the company is a little coincidental, but we need to look beyond that to the investment thesis. Like many companies at the onset of COVID-19, they transitioned to pursue a better way of detecting the virus. In December, 2021 the Company announced it had successfully demonstrated selective binding and detection of live [SARS-CoV-2 virus in saliva samples](#) using its patent-pending AMIPs™ technology, which could lead to a handheld breathalyzer system. This might have you thinking, “who cares, the pandemic is over”. But the development and learning from this process has led to [a partnership](#) with [TraceSafe Inc.](#), to use patented MIPs for imprinting, capturing, and detecting substances at the molecular level to provide an effective and proactive prevention and containment strategy for deadly viruses and pathogens in animals. If you think about the Avian Flu resulting in the culling of tens of millions of chickens and turkeys across the U.S. and Canada at present, there could be plenty of opportunity here. In fact, a widespread bird flu outbreak in 2005 raised alarm bells and prompted the US Senate to [allocate](#) US\$4 billion to prepare for a possible influenza pandemic.

Another active business line is the Affinity™ Extraction Process, an extraction solution specifically designed to extract THC and/or CBD from cannabis/hemp crude for the production of pure THC and CBD compounds. For Cannabis Producers, the Affinity™ unit is designed to capture and extract Cannabinoids to ensure the purest end product. The system replaces antiquated processes including winterization, distillation and chromatography. The highly scalable Baseline unit is designed to produce approximately 20 kg of cannabinoid distillate or full

spectrum distillate per day and each unit is capable of generating gross revenues to Sixth Wave of up to \$100K/month. Agreements are in place for the delivery of four machines, with the first of the three systems to Green Envy Extracts before the end of fiscal Q3 2022 (May) while an MOU for the fourth unit was [signed with Quantum Labs](#) of New Mexico in January, 2022.

The third potential revenue stream could come from IXOS®, a line of extraction polymers formulated for deployment in the gold mining industry for the extraction of gold from cyanide leach solutions. It is designed to be more selective, more efficient, have higher capacity, and offer environmental benefits compared to current processing methods. Sixth Wave's recent patent award and previous work with lithium, nickel, cobalt, rare earth elements, and platinum group metals point to similar potential that has proven successful in gold and silver mining. To that end, the Company has been [engaged by Champlain Mineral Ventures](#) to develop a "green" mining process for lithium from its Brazil Lake deposit. The Company has also submitted proposals to government entities and commercial mining companies to exploit its intellectual property for these critical metals with non-dilutive grants and contracts. This success is translating into a stream of small revenue generating contracts as mining companies move to test IXOS® in the Company's laboratories as well as with on-site pilots.

As you can see, Sixth Wave has a lot of opportunities percolating, with some potentially reaching a level where they could be providing the Company with revenue in the not too distant future. Sixth Wave just [raised C\\$2.6 million in March](#), which should buy them a little more time to achieve that goal. In the meantime, the stock is on sale, along with almost every company that has anything to do with technology. Not to say the stock price can't go lower, but it is almost free right now.

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

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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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# Sixth Wave hits the market with MIP coatings and sensors for the biodetection of viruses and bacteria

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[Sixth Wave Innovations Inc.](#) (CSE: SIXW | OTCQB: SIXWF) ("Sixth Wave") is a nanotechnology company focused on the 'detection and extraction' of target substances at the molecular level using specialized molecularly imprinted polymers (MIPs).

**Sixth Wave's nanotechnology uses MIPs to detect and extract almost any target molecule**



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

There is a huge list of potential industries that can benefit from Sixth Wave's MIP technology; however key areas of interest for now for Sixth Wave are health (rapid COVID-19 detection), cannabis production (cannabinoid purification), security, gold

and lithium extraction.

### **AMIP COVID-19 test with improved sensitivity**

[Announced](#) on August 19, 2021, Sixth Wave has improved the sensitivity and capability of its leading-edge nanotechnology AMIP to detect the presence of the COVID-19 virus at levels below 1,000,000 virus particles/mL. Dr. Garrett Kraft, Vice President of Innovation at Sixth Wave, [stated](#): “Hitting this level of detection is a huge achievement for us. With this technical milestone, we are fulfilling the sensitivity requirements for many of our intended end-use applications for high throughput screening.”

Note: Accelerated Molecular Imprinted Polymers (AMIPs) are rapid acting MIPs.

The clinical significance of a more sensitive test is the potential to detect COVID-19 earlier and in patients that are asymptomatic, when lower levels of the virus may be present. According to Grandview Research, the global COVID-19 diagnostics market size was estimated at [USD 84.4 billion](#).

Sixth Wave is quickly moving through a program of development and scale-up milestones toward a wide range of AMIPs virus rapid detection devices.

### **MIP coatings and sensors for biodetection of viruses and bacteria**

Sixth Wave recently [announced](#) that they have filed for a patent for their MIP coatings and sensors for biodetection. The patent focuses on the synthesis and processing of MIPs containing detection elements for viruses and bacteria. Sixth Wave [state](#): “The patent will be solely in the name of Sixth Wave, who will have exclusive ownership of the IP, subject to a reasonably



agreed-upon license fee. The work with York University is an expansion of Sixth Wave's efforts with the AMIP product line and focuses on detecting both viral and bacterial-based pathogens in fluid samples."

This could potentially be a huge business one day for Sixth Wave given the global need for rapid detection of viruses and bacteria.

### **More about Sixth Wave**

Sixth Wave has collaborated for research and testing with some of the largest entities in the chemical, resources, education, security, defense and medical sectors. Sixth Wave's systems are all patented or patent pending in 40+ countries worldwide.

Sixth Wave's key product names are IXOS® (a line of extraction polymers for the gold mining industry), Affinity™ (for the cannabis industry), and AMIPs (for sensitive and rapid COVID-19 testing). Sixth Wave recently [announced](#) an Affinity system has been shipped from the contract manufacturer and is on the way to Sixth Wave and then onto the first customer, Green Envy Extracts.

Other prospective products in development include a wide range of AMIPs Virus/Bacteria rapid detection devices, Personal Protective Equipment applications such as SIXW's Smart Mask™ (see news dated [May 15, 2020](#)), and smart clothing, airborne sensors, breathalyzers, ELISA-based technologies, cartridge/lateral flow designs, and others.

### **Closing remarks**

Sixth Wave is at an exciting stage as the Company rolls out the commercialization of its Affinity™ cannabinoid purification system, IXOS® gold mining extraction technology, and soon plans

the rollout of their AMIPs virus rapid detection devices and other products.

The idea of one day being able to potentially use a Sixth Wave MIP sensor to rapidly detect viruses and bacteria pathogens is quite amazing, and if it happens, would be a significant advancement for medical diagnosis.

Trading on a market cap of just C\$30 million, stay tuned for more developments from this fast-moving company.