



Decloaking Invisibility

To be seen or not be seen, that is the question!

By Guy Cramer, President/CEO of Hyperstealth Biotechnology Corp.

January 11, 2019

“With great power comes great responsibility.” This popular quote which is often associated with Uncle Ben in Spider Man has actually been around for centuries. Ask yourself what would you do if you discovered the power of invisibility and that power could be made available to anyone?

In 2010 I was conducting experiments and accidentally discovered a material that could render a six-inch object completely invisible. It didn't take me long before I was able to scale up the experiment to determine that the material could hide a person, a vehicle or a large building. As a successful developer of camouflage patterns for structures and buildings on U.S. federal government land, the highly successful Optifade® hunting line and over 5,000,000 military issued uniforms since 2003, this was a breakthrough I had never anticipated.

Camouflage is used to hide prey from predators' vision and conversely to hide the predators from the prey. There are biological limitations of natural camouflage such as spots or stripes that can only be overcome by a few species such as the octopus or cuttlefish which belong in the same class known as cephalopods. These masters of camouflage can change their colors and patterns to some extent to match that of their background. This mechanism can also be utilized to attract attention to create a high contrast display to communicate aggression, draw in an unsuspecting prey or impress potential mates.

Human development of camouflage patterns where we can combine spots with stripes has only recently occurred and it was only in early 2010 that I was able to develop an active camouflage called Smartcamo, which could change color from a dark woodland to a bright desert coloration and the colors in-between coming close to the ability of the cephalopods.

I thought that Smartcamo would be the pinnacle of camouflage, allowing for soldiers to ditch the requirement for multiple uniforms to match the varied environments they operate in. I was also concerned with the limitations to this technology which required a power source, meaning extra battery weight for the soldier, an increased thermal signature when it was active which could provide a potential beacon to an enemy equipped with thermal optics. Increased heat was another concern for soldiers operating in warm environments as the material would trap the body heat. It was also quite expensive which would have limited the number of potential customers.

Smartcamo had not solved the problem of masking movement. While static camouflage may be very effective in a given environment it is designed to operate in, the moment the target moves usually provides enough of an anomaly to the viewer to give away the most critical aspect of camouflage “where is it” and attract a detailed examination through the focal process to determine “what is it” part of the visual analysis.

Shortly after developing Smartcamo, I had made the accidental discovery of complete invisibility and called it “Quantum Stealth”. This material addressed most of the shortcomings of Smartcamo. Quantum Stealth was passive, it didn't require a power source and worked all the time, the material did all the work. It was lightweight and could be made as thin as paper. It completely hid the target by showing what was behind the target, so I had a material which could camouflage a target in any environment in any season at anytime of the day or night. No longer would the soldier or hunter require different camouflage patterns to match the environment. When configured correctly it masked any



Here is a mock-up of our Hyperstealth Quantum Stealth technology with my assistant behind it. No cameras or projectors are used. These photos are to show the Media the concept, they do not show the actual technology.

movement of the target. It was also quite inexpensive in comparison to Smartcamo and could be manufactured at costs per soldier that would be less than one camouflage uniform. Another capability of Quantum Stealth was to work across the entire visible spectrum including the near ultraviolet, the near infrared (night vision goggles and scopes), short wave infrared (very expensive night vision) and the thermal spectrum (thermal imagers).

It didn't take long for me to anticipate the nightmare scenarios that this material could offer a rogue nation, a terrorist cell or even the criminal element. As a Canadian citizen I wondered if our military or those allied with our country could utilize this material in Special Operations to provide them with an advantage that could allow them to go unseen and more covert where needed. I didn't want this material getting into the wrong hands.



After a chance meeting with a British military scientist in 2011, I was invited to demonstrate at British Military Headquarter in Bristol, England as well as the SBS (Special Boat Service) at the Royal Marine Base Poole, England. I demonstrated the Smartcamo material, I only showed them photos of the Quantum Stealth being overly protective of the technology at this initial stage. I was accompanied by two recently retired U.S. Navy SEAL's who were demonstrating different products for the British SBS (Special Boat Service – like the U.S. Navy SEAL's) and we were able to combine my technology demo in Bristol to allow them to also demonstrate at the same gathering. The SEAL's allowed me to demonstrate at their SBS meeting in Poole. Both Navy SEAL's became advisers for Hyperstealth after this trip.

A few articles had been written in the media on Smartcamo and in 2011 the U.S. Special Operations Command (SOCOM) had invited me to MacDill Air Force Base in Tampa, Florida to demonstrate. I took the opportunity to demonstrate both Smartcamo and Quantum Stealth surprising them and my U.S. Navy SEAL adviser, who saw Quantum Stealth demonstrated live for the first time. They confirmed at that demonstration that Quantum Stealth worked against night vision and thermal scopes.

The SEAL who had served in the Navy for 19 years, asked me when we were driving off the base what effect the material had on shadows, as the SEALs couldn't hide their shadows on the ocean floor when swimming up to a beach, this would give away their location to any observer above them regardless of their camouflage. I turned to him and said, "I have no idea, I never thought to look at that!". I went back to Canada and within an hour of experimenting I phoned him up and claimed, "I observed an 80-90% reduction of shadow". He responded that this shadow reduction alone should be of great interest to the U.S. Navy.

Word spread, and in 2012 I was requested to meet with the leading scientist at the Special Programs Office at the U.S. Army Research Laboratory, the same location I had met the British military scientist the year prior.

In early 2012 I was asked to travel to Ottawa to demonstrate to the RCMP (Royal Canadian Mounted Police) National Division Protective Operations ERT (Emergency Response Team), this group is like the U.S. Secret Service. CANSOFCOM (Special Operations Forces Command) also located in the Ottawa region asked for a separate demonstration while I was in town.

CNN Interview goes viral

In late 2012 CNN ran an interview with me discussing the Quantum Stealth technology, they showed mock-up photos like those in this paper. I asked them to mark the photos as mock-ups before the story aired which they did not do. The story went viral around the world. This brought international interest and a public desire to see the real technology.

Immediately after the CNN Story I was asked by the U.S. Navy Research Lab (NRL), in Washington D.C. to come down to provide a demonstration. The sentiment by the lead Navy PhD, there were four U.S. Navy PhDs and one U.S. Army PhD at the NRL meeting, was that if I was a U.S. citizen they would classify Quantum Stealth but due to my Canadian citizenship I needed to have Canada determine the status.

A common element occurred in the U.S. demonstrations, surprise that I had accomplished this and the inability to work with me as I was a Canadian, the Canadian Military would need to authorize any future collaboration with the U.S. to progress further. The NRL set up a meeting for me in Ottawa with their Canadian Counterparts at our DRDC (Defence Research and Development Canada). That meeting occurred in early 2013 and by this time I had two Canadian advisors to Hyperstealth join me at the meeting, a retired Canadian Brigadier General and a retired special forces soldier with 10 years of service from our Canadian Forces CANSOFCOM.

The DRDC determined at the meeting that my Quantum Stealth technology would not be classified. The NRL didn't understand why the DRDC didn't view it as they did but the NRL also stated that they would accept the Canadian decision. I was free to work with the U.S. military, other allied foreign militaries, commercial entities and/or secure the patent rights.

I understood that taking out a patent would publicly release the technology to anyone who wanted to look it up and would start us down the path of no return, so I continued to pursue allied military forces.



Internal discussions spread from my presentations and I was invited to demonstrate to numerous high level military groups in Canada and the U.S.; Canadian Special Forces JTF2 (Joint Task Force 2) counter-terrorism unit from Dwyer Hill, CSIS (Canadian Security and Intelligence Service), Canadian Forces Soldier System Programme Management, U.S. Navy Special Warfare (Navy SEAL teams) with five different demonstrations for DEVGRU (Development Group = SEAL team 6), USMC Sniper Instructors and FBI Hostage Rescue Team at their base in Quantico, VA, Marine Corps Warfighting Lab (MCWL), U.S. Army Natick Soldier Research Development and Engineering Center, 1st Special Forces Operational Detachment-Delta, commonly referred to as Delta Force or CAG (Combat Applications Group). U.S. Secret Service...

In 2014 the Chief Scientist at the U.S. Army's PEO Soldier (Program Executive Office) requested a demonstration and just prior to my presentation he said to me that what I was about to show him should be impossible. *it is understood in physics that you can bend specific frequencies of light such as the color red at 650 nanometers or the color blue at 445 nanometers but not both at the same time and definitely not the entire visible spectrum and beyond as I was claiming.*

After 20 minutes of seeing my presentation and then handling the material he turned to the two engineers in the room and said, "we need to rewrite everything we thought we knew about this because he just proved us wrong!". He also claimed that there was no military requirement to make things invisible because they didn't think it could be done. As such there was no requirement which also meant there were no funds available. He suggested I patent it and they could then buy it as COTS (Commercial Off The Shelf) which means that I would not be required to meet difficult military specifications. I told him my concerns for going that route as it would allow potential adversaries to duplicate.

In 2015 PEO soldier came out with a RFI (Request For Information) for our material, or anything similar by others. Our Canadian company was unable to compete due to my Canadian citizenship and Hyperstealth being a Canadian company was also unable to compete. To my knowledge no other company submitted a competing material to PEO soldier under this RFI and it was later canceled. We had a U.S. company in Colorado, it did not qualify as the owners were Canadian.

In 2016, the New Zealand Army invited me to demonstrate for their SOCOM near Auckland and while interested, they knew that they alone could not afford an exclusive on the technology and it might require a dedicated combination of Australia, New Zealand, Canada, and/or Britain and the U.S. to get it off the ground.

In May 2016 I was able to demonstrate to U.S. SOCOM Deputy PEO SOF Warrior, he was amazed and called his key people to see the material and then asked his people to follow up, there was no follow up. In 2017 I ran into him again and he asked what happened with my material, I told him no one followed up, he then tasked one of his subordinates to follow up which again didn't happen.

In 2017, the Australian Army Diggerworks then invited me to Melbourne to demonstrate. Diggerworks was developed to identify, develop and integrate Soldier Combat System (SCS) solutions to enhance the capability of the Australian Defence Force (ADF) Land Combat. It's a program to fast track potential technologies.

In September 2017 I met by chance the Deputy Commander of the Royal Canadian Navy, a Rear Admiral, who I was able to show a video demonstration of the material, he was impressed and asked why Canada didn't take it on? To sum up my response "I don't know!". This triggered another requested demonstration in Ottawa with the Director General Naval Force Development, Royal Canadian Navy and the Director of Naval Requirements, Royal Canadian Navy in December 2017.

In May 2018 I was able to demonstrate to the Commanding General of MARSOC (USMC Special Operations Command). He concurred with me that this material should not be released publicly and MARSOC was very interested in the technology. I was planning on a public release of the technology July 1, 2018 but the General asked me to reconsider to allow MARSOC a chance to review.

This led a final extended effort to provide the U.S. military with one last chance to acquire the technology before I couldn't hold back the patent process any longer.

MARSOC requested summaries of the technologies, which I put together, encrypted and provided to them. MARSOC reached out to other SOCOM people to see if there was other interest and USASOC (U.S. Army SOCOM) had several interested individuals within their Science and Technology section.

In September 2018 USASOC sent a soldier up to my office in Vancouver to see an extended demonstration over a few days and while he seemed genuinely excited by the potential applications, upon his return he was unable to get further interest from his chain of command.

My offer to MARSOC and USASOC; acquire it, cancel the provisional patents to retain secrecy and utilize it or bury it.

These were some of the many military demonstrations I conducted between 2011-2018 and my deadline for military acquisition due to the patent process was late November 2018.

Hyperstealth invisibly cloak slips through the military unnoticed!

I am still baffled by the lack of movement, particularly by the U.S. military as this inexpensive material renders almost every optical advantage they now have as obsolete; visible, ultraviolet, near infrared, short wave infrared and thermal. You won't see an enemy using this material with the naked eye or even with the newest night vision goggles (NVG) which combine the NIR (Near Infrared) and Thermal components in one. Drones, aircraft, satellites won't be able to see an enemy combatant, a vehicle, a structure that is using this. Why would the U.S. give up a huge advantage and potentially place themselves at a disadvantage?

If their goal was to use the technology without me, they were only shown Version 1 of the material and Version 2 made Version 1 obsolete (this was my failsafe if anyone leaked what I showed them as I did not have the patent protection in place during most of the demonstrations), I now have 9 different versions.



If you can't join them, beat them to it!

While I believe I went above and beyond a concerted effort to establish a responsible path forward to keep this technology out of the hands of adversaries, I spent far too long in that pursuit and owed it to my board of directors and shareholders to protect the intellectual property through patent applications. To be honest, their concerns over capitalization of these technologies grew louder as time went on. These patents will open our technology up to commercial markets as well as military applications as a COTS (Commercial Off The Shelf) specification.

I applied for four separate provisional patents over the past year, these protect the technology for 12 months and allow us to claim priority on those technologies from those filing dates. It also allowed me to make improvements before solidifying the IP (Intellectual Property) with the non-provisional patent application. Improvements can only be claimed from the new application date.



The first nonprovisional patent was filed under the Patent Cooperation Treaty (PCT) for a Solar Panel Amplifier which has been able to triple solar panel output! The PCT filing allows us to file the same patent internationally in up to 152 countries.

I was able to demonstrate in the patent that I could get 210.74% more power with Amorphous (thin film) solar panels which amounts to 3.1 times more power (100% is double, so 200% is triple the output). With Monocrystalline solar panels I achieved 180% more power or 2.8 times the output, nearly triple. Monocrystalline is the most common solar panel for residential and commercial applications.

One obvious consideration is that this could finally allow solar power to become a viable alternative in northern latitudes which do not get a large amount of solar radiation in the fall and winter months.

It should be noted that these levels are unlikely to be achieved with many of the current residential or commercial configurations due to the panels proximity to each other however I developed a practical system and included this in the patent application which showed a 16%+ increase in power output per panel that may be modified to function on pre-existing installations.

The patent is extremely large at 110 pages, 61 which are text and 49 which are drawings which details the numerous experiments and progression of discoveries which culminated with this filing. Our Patent Attorney has his Masters of Science in Physics, which is critical to being able to present this invention properly.

I see huge benefits for the solar market with our solar amplifier, not only from increased power output but also in reducing the costs associated with converting to solar energy by allowing the home or business owner to reach the breakeven point faster where the money saved finally covers the cost of the installation and solar panels.

Hyperstealth now has three remaining active provisional patents which are scheduled to be filed as non-provisional patents within the next 9 months. Improvements in each of the three provisional patents has also been achieved and Hyperstealth will not reveal publicly any intellectual property involved until all the improvements have been secured through these patents.

My recent experiments indicate that quantum physics are involved in some capacity; according to my patent attorney "that is the only explanation!". I had assumed that quantum mechanics was behind many of the "impossible" results, hence the "Quantum Stealth" name.

The quantum physics involved could also account for the apprehension of the military as the effects do not make complete sense, it doesn't fall into what is expected to happen in normal physics. In quantum physics you should expect the unexpected. My patent attorney explained that quantum mechanics happen all around us, we just have difficulty perceiving it.

Invisible Hunters

We have other markets for the light bending beyond the defense sector, why buy numerous hunting camouflage outfits which works for limited environments or seasons when you can get a \$50.00 piece of light bending material that hides you in any environment, in any season, day or night!

In 2017 more than \$63.1 billion in retail spending can be attributed to fishing and hunting in the U.S. alone according to the Outdoor Industry Organization.

The goal of the U.S. Military over a three-year period beginning in 2019 is to buy 108,000 Enhanced Night Vision Goggles (ENVG) to equip every close combat infantryman, scout, combat engineer and special operator. These ENVG's combine the latest Infrared and thermal technologies. Quantum Stealth can completely hide targets in these spectrums.

The Special Forces teams I demonstrated to were often disappointed that I didn't have the material configured as combat ready, my prototypes proved the concept. Considering the risks involved in how many people would learn about it if I had set up manufacturing, it likely wouldn't have remained secret for long and without the patents in place I would have little recourse if someone else who learned of the methodology tried to patent before me.

Why didn't we partner with a U.S. company to work with the U.S. Army in 2015 when the RFI was released? This would require us giving up a substantial portion of the control and potential royalties. Again, without the patents in place, we ran the risk of exposure to others who could capitalize on this.

While I still have concerns over the potential for misuse with Quantum Stealth, there are practical applications with the military and law enforcement as well as numerous commercial applications as mentioned prior.

One of our provisional patents has the potential to increase the resolution of LIDAR (Lasers operating like a Radar) used by self driving cars to scan their surroundings to determine a 3-dimensional image of the environment and allow artificial intelligence to determine safely how and when to steer, accelerate and brake. The resolution increase our technology provides could be more than 1000 times what it currently is, however, that is another story.

Currently Hyperstealth is inviting only CEO's of Fortune 500 Company's to see demonstrations of the Solar Amplifier technology along with the three other technologies which includes Quantum Stealth.

I expect once I have submitted all the non-provisional patents applications, which are all due in 2019, with the improvements discovered in the past few months, I will then be able to finally demonstrate publicly all the technologies involved.

Given that nonprovisional patents can be published by the patent office at any time after submission, they could publish our first patent application at any time thereby accelerating the disclosure.

Hyperstealth does not plan on manufacturing these technologies but licensing them to be manufactured by others. Do not contact us to ask for samples or product, we no longer respond to those requests.

You ain't seen nothing yet! (pun intended)

[Go back to the Hyperstealth Home Page](#)

"Smartcamo", "Quantum Stealth", "Solar Stealth" and "Lightbenders" are trademarks of Hyperstealth "Optifade" is a registered trademark of W.L. Gore and Associates.

"Hyperstealth" is a registered trademark of Hyperstealth Biotechnology Corp.

This page and information © Copyright 2019, Hyperstealth Biotechnology Corp., All Rights Reserved.

