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## Shoolini IP Portfolio

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**Applications Filed: 1502**

**Patents Granted: 128**

**Industrial Designs Granted: 276**

**Copyrights Registered: 123**

**Trademarks Registered: 10**

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patent filers*



### Patent Success Stories

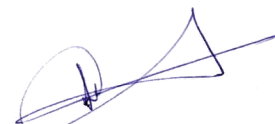
#### 1. "From Classroom Dreams to Global Impact: The Student-Led Saga of a Herbal Water Purifier Patent"

Patent Filing Number: **201711037586**

In the realm of innovation, Dr. Saurabh Kulshrestha, along with his dedicated team of students, has scripted a compelling narrative of transformative change. Their brainchild, a dip bag-based compact water purifier infused with the optimal blend of *Moringa oleifera* seed powder, charcoal, and other organic materials, has emerged as a beacon of hope in the pursuit of clean water solutions.

This patented invention represents more than just a scientific breakthrough; it signifies a commitment to addressing one of humanity's most pressing challenges. Dr. Kulshrestha's leadership and the collaborative spirit of the students paved the way for a simple yet powerful solution to water purification.

The beauty of their innovation lies in its accessibility – a dip bag delivery mechanism that requires nothing more than immersion in water. In minutes, this unassuming bag works its magic, utilizing the natural purification properties of *Moringa oleifera* seed powder and charcoal to deliver water free from impurities.



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Beyond its simplicity, this water purifier is a triumph in sustainability. Harnessing the power of organic materials, it not only cleanses water but also embodies a commitment to eco-friendly solutions. In regions where clean water is a luxury, this invention becomes a lifeline, offering a cost-effective, portable, and rapid response to the critical need for safe drinking water.

Dr. Saurabh Kulshrestha and his students have not merely created a product; they have sown the seeds of inspiration. Their dip bag water purifier is a testament to the potential of blending nature's elements with human ingenuity to forge solutions that transcend barriers and transform lives.

As recognition for their groundbreaking work grows, this team stands tall as a symbol of the positive impact that can be achieved through collaborative innovation. Dr. Kulshrestha's journey, intertwined with the aspirations and contributions of the students, exemplifies the boundless possibilities when dedication, knowledge, and creativity converge for the greater good.

In a world where access to clean water remains a global challenge, Dr. Saurabh Kulshrestha and his team have etched a story of innovation and compassion that echoes far beyond the laboratory walls. Their invention not only quenches the thirst for clean water but also ignites a thirst for knowledge, inspiring future inventors to dream big and create solutions that will shape a brighter, healthier future for all.

## 2. "Skincare Pioneers: Revolutionary Approach to Psoriasis Treatment"

Patent Filing Number: **202011006705**

In the hallowed halls of dermatological research, Dr. Poonam Negi and her dedicated team of students embark on a collective mission to redefine skin disorder treatment. Their journey is marked by innovation, compassion, and a commitment to alleviating the burdens of psoriasis sufferers.

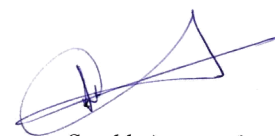
Dr. Negi, a luminary in the field, leads her team with a vision — to develop a safe topical therapy that surpasses the limitations of current treatments notorious for their side effects. The key to their success lies in an antipsoriatic formulation embedded in a state-of-the-art nanocarrier vesicular system.

The students, under Dr. Negi's mentorship, delve into the intricacies of this revolutionary technology. Together, they refine the formulation to not only target affected areas with precision but also to ensure enhanced retention, offering a gentle touch to the skin. The ethos of their work lies in its potential to prevent skin irritation, a game-changer in the landscape of psoriasis treatments.

The camaraderie within the research lab is palpable as the team navigates the challenges of developing a high-penetration solution that requires lower dosages. Dr. Negi's emphasis on minimizing side effects becomes a guiding principle, setting their work apart from traditional approaches.

As the research unfolds, Dr. Negi and her students witness the transformative power of their invention. It not only addresses the physical symptoms of psoriasis but also holds the promise of a cost-effective solution. The collaboration between Dr. Negi and her students becomes a testament to the impact of mentorship in fostering groundbreaking advancements in medical science.

Word spreads beyond the laboratory walls as the team's invention gains recognition for its efficacy,



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safety, and accessibility. Psoriasis patients find renewed hope, and healthcare professionals take note of this novel approach that could reshape the future of dermatological care.

In the end, Dr. Poonam Negi and her team stand at the forefront of a new era in skin disorder treatment, where innovation, compassion, and mentorship converge to create solutions that not only heal the skin but also offer a renewed sense of well-being to those who need it most.

### **3. Title: "Innovative Herbal Spray: A Game-Changer in Emergency Wound Care"**

Patent Filing Number: **202111023699**

In the realm of medical breakthroughs, Dr. Deepak Kumar, a visionary from the School of Pharmaceutical Sciences, has led a groundbreaking initiative that could redefine emergency wound care. His team's brainchild is an in-situ film-forming herbal spray, an ingenious blend of herbal extracts celebrated for their blood coagulating properties and film-forming polymers.

This inventive spray stands as a testament to the fusion of ancient healing wisdom with modern scientific advancements. The carefully selected herbal extracts, known for their natural blood coagulation capabilities, synergize seamlessly with the film-forming polymers, creating a thin, protective layer on wounds and cuts.

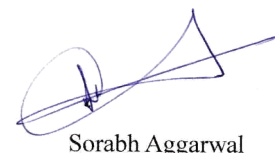
The immediate result is nothing short of revolutionary – a rapid coagulation process that staunches bleeding swiftly and efficiently. Dr. Kumar's invention addresses a critical need in emergency wound care, offering a solution that can be applied on-site to prevent excessive blood loss, potentially saving lives in crucial moments.

What sets this invention apart is not just its ability to coagulate blood rapidly; it also brings antimicrobial properties to the forefront. The thin film created by the spray not only accelerates the healing process but also acts as a shield against infections, further enhancing its efficacy in emergency scenarios.

The potential impact on global healthcare is profound. In regions with limited access to immediate medical facilities, Dr. Deepak Kumar's herbal spray becomes a game-changer. It transforms emergency wound care from a challenge into a manageable and immediate solution.

The journey of this innovation, led by Dr. Deepak Kumar and his team from the School of Pharmaceutical Sciences, exemplifies the power of collaborative innovation in the medical field. Their invention goes beyond simply healing wounds; it is a testament to the relentless pursuit of solutions that can make a tangible difference in emergency medical situations.

As this herbal spray gains recognition, it stands as a beacon of hope for a future where emergency wound care is not just efficient but also accessible to all. Dr. Deepak Kumar and his team have not just created a product; they have bestowed upon the world a tool that has the potential to redefine the standard of care in emergency medicine, showcasing the boundless possibilities when science and nature converge for the greater good.



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#### 4. "Peptide Pioneers: A Swift and Affordable Revolution in Malaria Diagnostics"

Patent Filing Number: 1229/DEL/2015, PCT/IN2016/000115

In the heart of a bustling research lab at the School of Biotechnology, a trio of brilliant minds, Umar Farooq, Nazam Khan, and Shakti Pal Singh Chauhan, embarked on a mission that would redefine malaria diagnostics. Fueled by the desire to create a quick and affordable solution, they delved into the intricate world of short peptide sequences.

Their journey began with a realization that conventional methods for malaria detection often fell short in terms of speed, cost, and accuracy, particularly in regions with limited resources. Determined to bridge this gap, the inventors set out to design a diagnostic alternative that would revolutionize the landscape.

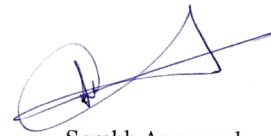
After exhaustive research, they unearthed unique antigenic regions within Plasmodium parasites, the culprits behind malaria. Armed with this knowledge, they crafted a set of short peptide sequences that promised not just speed but also high specificity. These peptides became the beacon of hope for a more efficient and precise malaria diagnosis.

What set their invention apart was the meticulous process of in-silico validation. Leveraging computational tools, they meticulously assessed the binding affinity and specificity of each peptide sequence. This ensured that their diagnostic agents would not only be swift but also accurate, minimizing the risk of false positives or negatives.

As their research unfolded, excitement buzzed through the lab. The inventors knew they were onto something transformative. The short peptide sequences proved to be not just a scientific innovation but a potential game-changer in the global fight against malaria.

With their invention now ready for the world, the trio filed a patent, outlining the quick and affordable method they had pioneered. The patent story encapsulated the essence of their breakthrough – the rapidity of the diagnostic process, the cost-effectiveness of short peptide synthesis, and the in-silico validation ensuring precision.

Their invention stood as a testament to the power of innovation and collaboration. The trio hoped that their work would not only revolutionize malaria diagnostics but also make a meaningful impact on healthcare in resource-limited settings. The story of Umar Farooq, Nazam Khan, and Shakti Pal Singh Chauhan became a beacon of inspiration, proving that sometimes, the smallest sequences can make the biggest difference.



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## 5. New Technique Promises Early Breast Cancer Detection

Patent filing number: **202411028510**

Breast cancer is a growing concern worldwide, which is why early detection plays a crucial role in successful treatment and survival rates. Shoolini University researchers Assistant Professor-cum-System Analyst Bharti Thakur and Assistant Professor Sushil Kumar have made significant strides in this area, filing a patent for their innovative dual-algorithm approach for early breast cancer screening. This method, designed to benefit rural and developing communities, uses Machine Learning to enhance accuracy and efficiency in detecting the disease.

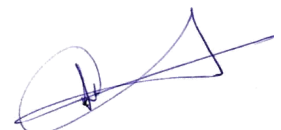
Their invention uses advanced computer techniques to analyse medical data, achieving an impressive accuracy rate of 50% to 90%. This significant improvement over traditional methods allows for earlier detection and timely treatment, improving patient outcomes considerably. By analysing genetic data, the researchers can identify cancer-causing genes in women, offering a proactive approach to breast cancer prevention and treatment.

Inspired by her personal experience and commitment to women's health, Bharti Thakur stated, "As a woman, I wanted to create something that would help others detect breast cancer early and increase their chances of a cure."

One of the key advantages of this invention is its accessibility for people in areas with limited healthcare resources. Traditional cancer screening methods are often too expensive or unavailable in rural and developing regions. This new, cost-effective method empowers local community health workers to perform screenings, ensuring that even the most marginalised populations can access life-saving tests. It also reduces the financial burden on patients and healthcare systems.

Designed with sustainability in mind, the invention utilises energy-efficient algorithms and cloud computing to minimise resource consumption and environmental impact. Additionally, the method includes educational components to raise awareness about breast cancer and promote proactive health behaviours in communities.

This dual-algorithm approach for early breast cancer detection represents a major advancement in public health. By offering a sustainable and accessible solution, it has the potential to save countless lives and improve the overall well-being of women worldwide.



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## 6. Patented! Game-Changing Tech to Detect Drunk Drivers

Patent filing number: **201811005532**

In an innovative stride toward enhancing road safety, Assistant Prof Brij Bhushan Sharma of Shoolini University has developed and patented a state-of-the-art system to detect drunk drivers. This groundbreaking technology, which utilises an Arduino Uno R3 microcontroller and an MQ-3 gas sensor module, is designed to detect alcohol levels near the driver and provide immediate alerts through LED indicators.

Despite rigorous laws and periodic police checks, the menace of drunk driving continues to escalate, contributing to 41% of traffic-related fatalities, according to the National Highway Traffic Safety Administration. Traditional methods of detection, which often involve manual checks or medical examinations, have proved insufficient in effectively curbing this dangerous behaviour.

Assistant Prof Sharma's drunk drivers detection system offers a proactive solution by automatically detecting alcohol concentrations of 1000ppm or higher around the driver. Once detected, the sensor's output triggers the Arduino controller, which activates an LED light indication, signalling that the driver may be under the influence of alcohol.

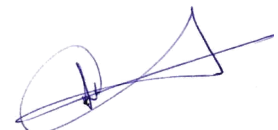
The inspiration for this device struck Assistant Prof Sharma during a routine drive, where he encountered a police checkpoint. Observing the inefficiencies of the manual checking process, he envisioned a built-in vehicle system that could streamline the detection process, thereby enhancing efficiency and reducing roadblocks.

## 7. Seed Resilience Patent

Patent filing number: **202311016885**

A Doped Cobalt Zinc Ferrite Photocatalyst and its Process of Preparing the Same'. This patent is distinguished by its innovative approach to enhancing seed resilience against temperature variations, introducing a transformative technique in plant cultivation adaptable to diverse environmental conditions.

The invention, a collaborative effort by Garima Rana, Pooja Dhiman, Amit Kumar, and Gaurav Sharma from the School of Physics & Materials Science, introduces a 'Doped Cobalt Zinc Ferrite Photocatalyst'. Notably effective in purifying organic wastewater by degrading methylene blue in just 60 minutes, it also features reusable and recoverable properties.



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## 8. Patent for Dual-Use Energy System

Patent filing number: **368369-001**

Electricity is something many of us take for granted, especially in the bustling cities where it flows uninterrupted. However, for those living in regions with erratic access to electricity, it's a precious resource.

Addressing this concern, a team led by Associate Professor Robin Thakur from the School of Core Engineering at Shoolini University, in collaboration with engineering students Vishal Diwan, Sourav Thakur, Himanshu Sharma, Sahil Chaudhary, and Aman Dev Sharma, has devised an ingenious solution with the potential to change lives.

Their creation? An electricity-generating water pumping paddling system, which they have successfully patented. This innovative project not only generates electricity but also provides a solution for pumping water during power outages, all while promoting physical health.

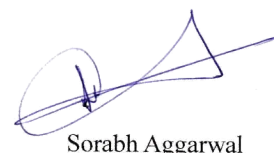
Electricity interruptions disrupt daily life and can be incredibly challenging in rural areas, where outages can extend for days. Imagine not being able to use essential electronic devices like lights, fans, or refrigerators during these times. It's a reality for many. Additionally, water can't be pumped into storage tanks without electricity, which can lead to significant problems.

The project designed by this dedicated team addresses these pressing issues. It harnesses mechanical energy created through a human effort by pedalling and converts it into electricity. This electricity is stored in a battery, ready for use when needed, making it a valuable asset during power cuts. Moreover, the system incorporates a water pumping mechanism, ensuring a continuous water supply to storage tanks.

What sets this invention apart is its unique human-centric design. The paddle of the system requires manual cycling, not only generating electricity but also providing a means for physical exercise. It's a win-win situation where you stay healthy while contributing to your energy needs. Beyond immediate usage, the stored electricity can be utilised within a week for various purposes.

The roots of this innovation can be traced back to the semester-wise research conducted by students at Shoolini University. As they completed their research requirements, the team saw the potential to address a real-world problem. The result is a solution that benefits individual households and can potentially transform the lives of many in rural areas.

While this system has yet to be commercialised or installed in homes, its future lies in rural households where it can make a significant impact. While it joins the ranks of other electricity-generating systems, it stands out due to its human-powered approach, offering not only electricity but also an opportunity to stay physically fit.



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