# **B9**Creations

Education & Research Additive Manufacturing Solutions



### **B9CREATIONS**

B9Creations' differentiated approach to solving problems with Additive Manufacturing has developed a base of raving fans in high-value industries such as medical, aerospace, and high-precision manufacturing.

Our track record of exceeding the most demanding customer requirements has positioned us to enable customers to progress from prototyping to fully-scaled production leveraging additive manufacturing.



2019 North American Recipient Awarded by Deloitte LLP



N°2318

Fastest-Growing Co. in USA

Financial Times The Americas' Fastest Growing Companies

2021 | Ranked No. 319



### **B9Creations Global Network**

Experts spanning nearly 70 countries across the globe.



B9Creations Dealer
B9Creations Customer
B9Creations Headquarters

# We're the **INNOVATION TEAM**

that leading brands in the toughest industries depend on.





# We power your research so you can change our world

### Some of the institutions using our technology include:

#### Canada

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McGill University University Western Ontario

#### China

The Chinese University of Hong Kong Discovery College Zhejiang University

#### Germany

University of Freiburg

#### Japan

Kyoto University

#### New Zealand

University of Canterbury

#### South Korea

Pohang University of Science & Technology Seoul National University of Science and Technology

#### Singapore National University of Singapore

United Kingdom

University of Edinburgh University of Dundee University of Kent

#### United States

Arizona State University August University Baylor University Brigham Young University Brown University Carnegie Mellon University City University of New York Clemson University College for Creative Studies Columbia University Dalhousie University Georgia Tech Iowa State University Johns Hopkins University

#### United States

Kansas State University McMaster University New York University North Carolina State University Ohio State University Penn State Purdue University South Dakota School of Mines & Technology South Orange County Community College District Stanford University University at Buffalo University of Arizona University of California University of Hawaii University of Maryland University of Michigan University of Nebraska Lincoln University of Pennsylvania School of Engineering & **Applied Science** University of Rochester University of Utah University of Texas, Arlington University of Texas, Austin

### For research such as:

Microfluidics Stem Cell Research **Biomedical Modeling & Research** Drone Development Nanoparticle Micro-Circuitry Mechanical Engineering Materials Science & Development Physics Advanced Manufacturing Art & Design **Faculty Research** Student Projects And More

### **Research Partnerships**

### **Osteoarthritis Cure**

CellField Technologies & SD School of Mines & Tech

### Security Printing & Anti-Counterfeiting Tech

SD School of Mines & Tech

### **International Space Station**

Made in Space

### Self-Detecting Structural Damage

Rey Juan Carlos University

### **Optical Structures** University of Freiburg

University of Freiburg

#### Wildlife Research Game, Fish & Parks

Grow 3D cultures of cartilage cells that cause osteoarthritis, degenerative joint disease, that allow cells to maintain their physiological nature 4 times as long as other tech

3D printing QR codes, only visible under infrared light, that store digital information on authenticity & origin for pharmaceutical packaging, currency & passports, historical artifacts & more

3D printing in microgravity for use on the International Space Station to expand extraterrestrial AM capabilities to respond to unforeseeable demands of on orbit manufacturing

3D printed self-sensing composite parts with electrically conductive, carbon nanotube reinforced resin to monitor structural health

3D printing technology to fabricate optical structures by testing different material compositions which affect optical quality and mechanical flexibility

3D printed tracking collars to pioneer data collection for population growth rate, survival estimates, & harvest models for wildlife



Plus, research on microfluidics, stem cells, drones, nanoparticles, biomedicine, microcircuitry, materials science, geology, physicals & manufacturing at Columbia, Stanford, Sandia & Argonne National Labs & more.

### **Biomedical Research**

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### CHALLENGE:

Biomedical research company CellField needed to find cure for osteoarthritis. But there was no effective way to study the cells that caused it.

### **SOLUTION:**

Grow 3D cultures of cartilage cells that cause osteoarthritis, or degenerative joint disease, with a 3D printed structure that allows cells to maintain their physiological nature 4x longer than other technology.

#### See full story here.

### Brady Neiles South Dakota Game, Fish & Parks

### **CHALLENGE:**

At the time, the method of tracking juvenile animals involved surgically implanting a radio transmitter into their bodies – which can lead to injury, migration to other areas of the body, and even fatalities in some instances. His goal was to find a collar that could expand as an animal grows.

### **SOLUTION:**

Leveraging B9Creations' 3D printing technology, he created a harmless and successful alternative to implanted trackers – expandable collars 3D printed in B9Creations' Rugged – Nylon 6 material.

"The collars could make a huge difference – we collar a lot of juveniles in wildlife, so down the road, I could see this being used on a lot of other species as well. We collar 250 fawns every single year throughout the state of South Dakota. That would be a huge opportunity, as well."



### See full story here.

### **Anti-Counterfeiting**





Counterfeiting is precited to drain \$4.2T from the US global economy by 2022 – from currency to pharmaceuticals, art, and beyond.

### **SOLUTION:**

3D print invisible QR codes onto objects. QR codes can hold information on authentication, manufacturer, and more from pharmaceutical packaging to art & currency to protect against counterfeit copies. Only visible under infrared light, the QR codes won't damage the product but delivers an arsenal of safety hidden on it in plain sight. 

This QR code is used to give another device the ability to scan for this event. The QR code should only be given to people who you want to be able to scan. They require the scanning app but do not need a login. You can disable extra scannets from your setup page.

### **Beyond Human Touch: Robotic Skin**

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Robotic skin with human-like sensing holds immense potential in robotics, prosthetics & healthcare. Researchers are leveraging B9Creations technology for pressure sensors on robotic skin to detect blood pulsation to body weight.



### **3D Printed Biopsy Needles**

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To explore the feasibility of leveraging **3D printing to fabricate biopsy needles,** researchers at WSU are using **B9Creations technology to design and** test 3D printed biopsy needles with altered tip geometry and complex internal features that cannot be manufactured using traditional methods.



High-precision, fast additive manufacturing platform with push-button technology

B9Create 2.0 CAM software & B9Captivate custom material development toolkit

> Get prototypes, end-use parts & molds in engineering resins in < 1 hr

## **B9Creations**

### **Additive Manufacturing Solutions**

Production-grade parts with automated post-processing to match using the B9Clean

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Cure models in minutes with memory settings for repeatable results

2014

### **B9Creations** Materials

Bring your ideas to life with our materials.

### **Engineering Materials**



GRAY Rapid Prototyping



HD Slate Ultra Precision



RUGGED – NYLON 6 Impact resistance



RESILIENT – SILICONE Elastomeric



ROBUST – ABS/PC Superior strength & heat resistance





ROBUST – ABS Strength & rigidity RIGID – ESD Hi-temp, Histrength, ESD



Autoclave & ETO sterilization have been customer validated on biocompatible resins

### **B9Creations Next Steps**

Discover how high-resolution 3D printing can work for you.



### Want to find out more?

- Request a sample
- Get more product information
- Schedule a product demo
- Talk to a solutions expert

### Take the next step

info@b9c.com (605) 787-0652 b9c.com