

MED TECH

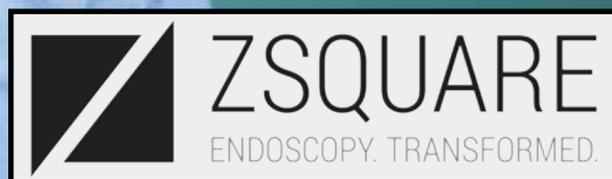


OUTLOOK

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DR. ASAF SHAHMOON,
FOUNDER & CEO



**SEEING THE
INVISIBLE: HIGH
PERFORMANCE,
SINGLE-USE
ENDOSCOPY**

\$15





SEEING THE INVISIBLE: HIGH PERFORMANCE, SINGLE-USE ENDOSCOPY

Endoscopy has become an indispensable medical tool for physicians to visually examine an internal organ or tissue without having to make a large incision. One could argue, due to its ability to offer minimally invasive medical interventions, that endoscopy must be an incredibly dynamic area of innovation. On the contrary, the design and usage of endoscopes remains mostly unchanged since its advent in 1853. Some of the areas where the endoscopes have made progress include the development of single-use and narrow diameter fibers to address issues concerning cross-contamination and reach respectively. However, single-use endoscopes are associated with low resolution and poor user experience, especially in narrow diameters, because of the need to maintain a low cost per-use. Dr. Asaf Shahmoon, with years of intense research and academic work in the field of photonics at BIU in Israel and the Friedrich-Alexander University (FAU) in Germany, founded ZSQUARE not only to overcome these challenges but to disrupt the way people approach endoscopy—bringing back the long due innovation to this area.

ZSQUARE has mapped out three endoscopy innovation areas—clinical, healthcare, and market, and set out to create a sustainable technology that would significantly shift all three. Clinically, the endoscopes should be flexible and small enough to go where no endoscope has gone before and transmit high-resolution images. In terms of the healthcare system, the endoscopes should solve the cross-contamination problem that plagues any environment that uses multi-use endoscopes. And market-wise, the endoscopes should be cost-effective enough to serve every imaginable setting, from hospitals to outpatient clinics, to developing countries. “Our approach to development is to unlock that one brilliant solution that efficiently answers all these needs. Something that is more than the sum of its parts,” remarks Dr. Shahmoon, Founder and CEO, ZSQUARE. To this end, the company has developed a high-performance, high-resolution, single-use endoscopic platform that fits a broad range of indications, eliminating the risk of contamination, dramatically cutting healthcare costs, and improving usability and diagnosis quality. The company’s patented miniature fibers (0.2mm) and smaller diameters allow for unprecedented



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Z SQUARE

TOP
Endoscopy
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The annual listing of 10 companies that are at the forefront of providing endoscopy solutions and impacting the industry

WE AIM TO REACH SURGEONS AND CLINICS ACROSS THE GLOBE TO PROMOTE SAFE, ACCESSIBLE HEALTHCARE IN EVERY MEDICAL SETTING

of expansion into our product's DNA. The fact that it's universally usable and easily adaptable to new indications is what makes it so worthwhile. Once you purchase our system, it can serve you in any indication imaginable," says Prof. Zeev Zalevsky, Co-founder & CTO, ZSQUARE. He brings years of experience in nanophotonics, engineering, and technology to the company.

ZSQUARE has recently won the prestigious EDISON Award 2020 and REDDOT Award 2020 in recognition of its disruptive technological platform and design respectively. The company wants to launch its game-changing platform with the first endoscopic shell for the ENT indication. "Once we achieve the first FDA approval, we can easily scale up to other indications," says Shahmoon. With support from its network of Key Opinion Leaders (KOLs), the company plans a soft launch at a number of major hospitals in the US and Japan, which will place the platform in the hands of leading physicians. "With their experience and support, we'll eventually reach the entire industry," he concludes. 

access, serving indications never available before. "We aim to reach surgeons and clinics across the globe to promote safe, accessible healthcare in every medical setting," he adds.

ZSQUARE has developed the world's only scalable endoscopic platform capable of transmitting high-res images through flexible, single-use endoscopes, using polymeric fibers of any shape or size. The platform's unique design houses the optics in a detachable single-use shell and the electronics in a reusable imaging core.

In addition to dramatically reducing the optical component's diameter without compromising resolution, this two-part endoscope design allows to use the same imaging core while switching indication-specific shells purpose-made for ENT, bronchoscopy, duodenoscopy, urology, gynecology, and more. Where the indication calls for it, new shells with varying lengths, widths and features (such as 3D imaging and working channels) can be easily developed simply by bundling additional fibers. "We've built the idea

