

## AkknaTek finds safer methods for using high-end intraocular lenses

By NICOLE SHELDON

AkknaTek, a German-based startup company, offers innovative solutions for ophthalmology, specializing in cataract surgery.

AkknaTek is one of 10 finalist companies with optics imaging, and photonics-enabled technologies in the Luminate NY accelerator program. The \$25 million program — which is funded by the Finger Lakes Forward Upstate Revitalization Initiative and administered by NextCorps — provides each finalist with an immediate investment of \$100,000 and months of support to speed the commercialization of their technologies and businesses. On Demo Day (date TBD given current pandemic), the companies will compete for up to \$2 million in follow-on funding.

Patients suffering from cataract disease can often achieve better vision through premium artificial lenses, but surgeons tend to be reluctant to go that route because of unpredictable postoperative refractive surprises. AkknaTek's Lens Reviewer overcomes the challenge of implanting premium lenses by correcting the lens centration after implantation.

"Our region — with its vast university, medical and manufacturing resources — is uniquely positioned to assist health care and medical device companies in moving from technology and patient trial to launch," said Sujatha Ramanujan, managing director of Luminate. "By connecting international startups to these local assets, we're able to jump-start their presence here in the Finger Lakes, as well as in the U.S. marketplace."

Founder and co-CEO Edgar Janunts and his team have created a diagnostic system that includes an alignment joystick, an optical imaging system and an embedded computer. A series of images are created while a patient fixates on a green light. The built-in analysis software then calculates the intraocular lens (IOL) dislocation. AkknaTek technology allows for a non-contact method of obtaining measurements.

**How did you and your team develop the concept for your product?**

**Edgar Janunts:** I had been conducting research on next-generation intraocular lenses at Saarland University in Germany. During the clinical research process, I was evaluating the performance of various types of high-end intraocular lenses and realized that they still present challenges to ensuring the desired output.

Despite their promising features, surgical implementation in clinical practice doesn't always result in predictable, positive vision results for patients. In these cases, patients remain unsatisfied because of visual impairment. This reality, which has been documented by a number of surgeons in literature, is often referred to as "post-cataract surprise." This is one of the main reasons why surgeons limit the use of high-end intraocular lenses.

I became dedicated to finding a solution so that every cataract patient can get excellent vision



Provided photo

**AkknaTek technology has created a solution so cataract patients can get clear vision through technologically advanced intraocular lenses and remain glasses free.**

through technologically advanced intraocular lenses and remain spectacle free. This started our journey in closely studying hundreds of clinical cases to come up with an innovative imaging technology and a straightforward treatment procedure.

**What drew you and your team to lenses and cataract surgery?**

**EJ:** Patient dissatisfaction, impaired visual outcomes and limited life quality of many cataract patients are among the main driving forces for our team. Most patients aren't satisfied with just recovering their vision. Understandably, patients demand a better visual acuity, higher contrast and the ability to remain or be spectacle free. Treatment methods for cataracts have been continuously advancing over the last decades; however, various challenges are still present, including impaired visual outcome, particularly in the case of high-end lens implantations.

Cataract surgery is one of the most frequently performed surgeries worldwide, with over 25 million done annually, according to the World Health Organization. In the U.S., it's the No. 1 surgical procedure. Given our aging society, the ability to effectively correct for cataracts has an important impact on quality of life. For these reasons, it's essential to identify and fix the disease, before it leads to bigger issues, additional risks and higher costs.

**How long have you been working on this product?**

**EJ:** It has taken us several years to finalize the product and commercialize the technology. Our technology is based on long-term research and clinical achievements. Moreover, it took some efforts to get the technology validated from the marketplace. For a medical technology startup, the barriers



Provided photo

**AkknaTek founder and co-CEO Edgar Janunts.**

are comparably higher since there are a number of regulatory requirements to fulfill.

**Who is the target audience for your product?**

**EJ:** Our customers are modern ophthalmological clinics and ophthalmic surgeons worldwide.

**Tell us about your experience being in Luminate.**

**EJ:** Luminate offers us a good ecosystem in the field of optical technologies and health care, outstanding business connections with industry leaders across the U.S., and world-class mentors who support us on a weekly basis. Beside one-on-one meetings with the Luminate team, we also get intensive training and hands-on workshops in all business disciplines given by top experts. This is especially important for European companies like ours that are taking their first steps toward U.S. market entry.

**What are you hoping to achieve during your time in Luminate?**

**EJ:** Together with Luminate, we

hope to gain active support for our activities in the U.S. market, including FDA approval, scaling and strategic partnerships with the medtech industry and with health care providers. As the world's largest accelerator in optical technologies, we are connected to a community of startups in the Luminate program that are also dealing with similar problems in commercializing hardware devices and medtech procedures. We also hope to build associations within the New York photonics network.

**If AkknaTek wins, what do you plan to do with the \$1 million in follow-on funding?**

**EJ:** Luminate funding would allow us to scale our business, reveal new market opportunities and establish us firmly in the U.S. and European markets. We plan to extend our marketing and sales team in Rochester, as well as set up a production line in the U.S.

*nsheldon@bridgetowermedia.com / (585) 363-7031*