

VIRTUAL REALITY CONTACT LENSES

S.O. Chernenko – Sumy State University, group IN-02

S.H. Zolotova – E L Adviser

Contact lenses that help enhance normal vision with megapixel 3D panoramic images are being designed by scientists using military funding.

For those who do not want to rely on contact lenses, future versions could involve lenses directly implanted within the eye, researchers added.

Over the decades, the video displays that everyone from fighter pilots to the general public use have grown increasingly complex. One possibility for advanced displays is a virtual reality (VR) system that replaces our view of the real world with computer-generated vistas. Another idea consists of augmented reality (AR) displays that overlay computer-generated images over real-world environments. However, these often require bulky apparatus such as oversized helmets.

Now Innovega researchers funded by the Defense Advanced Research Projects Agency and the National Science Foundation are developing novel contact lenses that can help view tiny full-color megapixel displays.

The new system consists of advanced contact lenses working in conjunction with lightweight eyewear. Normally, the human eye is limited in its ability to focus on objects placed very near it. The contact lenses contain optics that focus images displayed on the eyewear onto the light-sensing retina in the back of the eye, allowing the wearer to see them properly.