

Immersive light stimulation mask for circadian and neurostimulatory intervention

Innovative light mask that replicates natural daylight impressions with their biological effects.

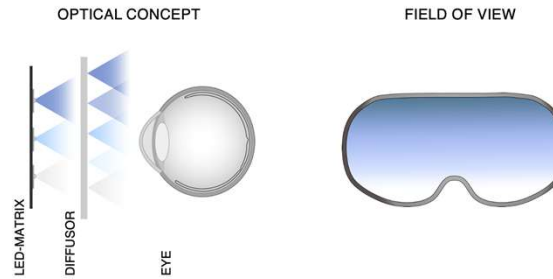
STATUS QUO

Current light therapy is divided: stationary devices offer the required intensity of 10,000 lux, but severely restrict mobility. Mobile light glasses, on the other hand, often use point-shaped LED light sources with dangerously high luminance levels and insufficient overall brightness. Technically, this results in inhomogeneity and a risk of glare, while on the user side, disorientation or a lack of well-being significantly limit acceptance and therapeutic effectiveness.

OUR TECHNOLOGY

The innovation is a portable light stimulation mask that creates a large-scale, immersive sky impression in the field of vision. A spectrally optimised LED matrix precisely replicates the characteristics of the natural sky and enables high biological effectiveness without glare or visual irritation. The system combines mobility with the profound psychological impact of natural light dynamics for effective, user-centred light intervention in everyday life.

TECHNOLOGY



BENEFITS

- High biological efficacy
- High user acceptance
- Glare-free and photobiologically safe

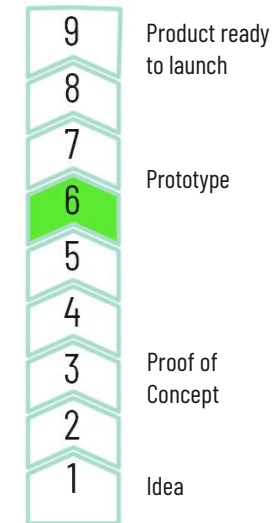
APPLICATION POSSIBILITIES

The system is primarily used to treat seasonal depression and stabilize the circadian rhythm in shift workers or those suffering from jet lag. In addition, the mask offers potential in workplace health promotion, clinical neurostimulation for dementia patients, and in supporting meditative and mental regeneration processes.

COMMERCIALIZATION OPPORTUNITIES

There are various possibilities for cooperation between the industrial partner and TU Darmstadt: from an exchange with the know-how carriers of the technology up to a close cooperation in case of further development needs. The technology is protected by intellectual property rights and can be used by the industry partner after a sale or licensing agreement.

CURRENT STAGE OF DEVELOPMENT TECHNOLOGY READINESS LEVEL (TRL)



Development is at level 6 to 7: a functional prototype with an immersive light matrix, temporal modulation and app control has been technologically validated.

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