

# PRESS RELEASE

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**PRESS RELEASE**October 28, 2021 || Page 1 | 3

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Trainee Project 2021 of Fraunhofer IPMS develops noise-indicating lamp

## Can't make noise visible? Yes, we can!

**The Bremerhaven association "Rückenwind für Lehrer Kinder e.V." offers children free care, leisure and support services. The children find a variety of activities here and learn to abide by rules. Nevertheless, it sometimes gets loud. Too loud. To ensure an appropriate noise level during the day, a trainee project of the Fraunhofer Institute for Photonic Microsystems IPMS has developed a noise-indicating lamp to visualize the volume in rooms.**

The noise-indicating lamp developed by Fraunhofer IPMS trainees uses clever technology to visually display the noise level in indoor spaces. The familiar traffic light colors green, yellow and red illustrate the current noise level in the environment. At the peak noise level there is also an acoustic signal. This means that everyone, young and old alike, can tell when it is too loud in the room. "As a native of Bremerhaven, I think the work of the Rückenwind association is great and was immediately willing to help when asked for support," says Dr. Olaf Hild, group manager at Fraunhofer IPMS in Dresden. "Therefore, with the support of our institute management, I decided to implement a trainee project. In the process, our trainees benefited from an exciting cross-departmental project for a good cause," Hild continues.

Comparable to a traffic light circuit, the lamp lights up green when it is quiet. If the ambient noise level increases, the colors gradually change from green to yellow, then to red and finally to a flashing red signal. If the traffic light is in flashing mode for more than five seconds, an audible warning call sounds for five seconds. The volume of the signal can be continuously adjusted between 70 dB and 100 dB if required. The lamp can also be adjusted to the ambient noise level. Thus, the noise thresholds can be set in three different levels. Level 1, for example, can be used for quiet work or rest periods. At this level, the lamp already lights up at low noise levels. If level 3 is set, normal volume conversation is possible; the traffic light only gives an alarm at a loud noise level. In addition, the lamp can also be set manually to green, yellow or red. It is operated by means of a power bank, which enables mobile use for up to approximately 14 hours. If the battery of the power bank is empty, the lamp can be charged via the corresponding USB-C cable and used at the same time.

Henry Niemann, trainer at Fraunhofer IPMS, particularly praises the focused and structured work of the trainees: "The aim was for the trainees to become familiar with project processes as well as project management, to take on responsibility and to link and get to know the different areas of the respective trainees. They did this confidently

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and on their own responsibility." The trainees themselves are also proud of their performance: "In this project, we had the opportunity to get to know the process, content and management of a project and to work independently. We were able to be creative ourselves, contribute ideas and coordinate them with the customer. Above all, we realized how important teamwork, organization and discipline are in order to successfully complete a project," says trainee and project manager Sophie Kupke.

The noise-indicating lamp was officially handed over to Lars Graß from the association "Rückenwind für Leher Kinder e.V." in Bremerhaven on October 26, 2021. This marks the end of the trainee project with a great success. Lars Graß is enthusiastic: "The lamp can visually and acoustically display the ambient noise level and thus positively influence the behavior of everyone in the room. This makes it the perfect solution for a good atmosphere in which everyone feels comfortable."

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**About Fraunhofer IPMS**

The Fraunhofer Institute for Photonic Microsystems IPMS stands for applied research and development in the fields of intelligent industrial solutions, medical technology and improved quality of life. Our research focuses on miniaturized sensors and actuators, integrated circuits, wireless and wired data communication, and customized MEMS systems.

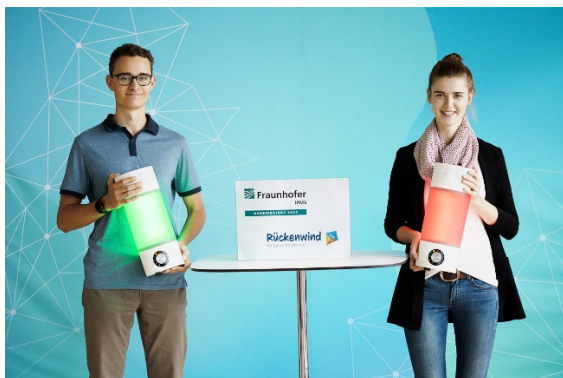
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**PRESS RELEASE**

October 28, 2021 || Page 2 | 3

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**Images**



In the trainee project 2021 at Fraunhofer IPMS, Markus Kraetzig and Sophie Kupke developed a lamp that visually indicates the noise level in indoor spaces. © Fraunhofer IPMS



Lamp to visually indicate noise levels. © Fraunhofer IPMS



Dr. Olaf Hild from Fraunhofer IPMS handing over the noise-indicating lamp to Rückenwind e.V.  
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