

## The Virtual Photonics Escape Room

The Max Planck School of Photonics, a Joint Graduate Program of German Universities and Research institutions, constantly searches for new Marketing and Digital Teaching strategies to increase the visibility of the field and reach out to potential PhD candidates. For the application phase of 2022 we released the Virtual Photonics Escape Room as a social outreach activity for interested students all over the world.

Digital Escape Room games became a popular activity for digital socializing during the pandemic. Their concept is similar to the in-person or board game version, where a group of players has to collaborate to solve a series of puzzles to reach the final goal, such as escaping a danger, saving a person or solving a crime, in a given time limit. In the digital version, the game is hosted on a website and the players communicate via a video conferencing platform of their choice. The design and implementation were done by Uwe Malow and Tim Heitman from DEscape –Digitale Escape Rooms and the TSM Concept marketing agency.

The game itself has not only a photonics-related story but the puzzles themselves are based on the research topics of the institutions in the MPSP network. Our Escape Room was developed in close collaboration between the agency and the MPSP coordinators to translate the scientific questions into riddles that are feasible for this game environment. In the story, the players get into the role of students visiting one of the labs when they learn that Dr. Dark wants to destroy the Nobel Prize ceremony, because he was not awarded a prize himself. The goal is to find a secret code to re-align his “superlaser”, which is focused on the ceremony site in time. To achieve this, the players travel virtually to all eight MPSP locations, where parts of the code are hidden in puzzles in the research labs. The answers are, for example, found in microscope images or specially prepared molecules. It is however not necessary to be an expert in any of the fields to solve the puzzles, ensuring that the game is suitable for outreach. For every mentioned research topic, we provide additional information about the scientific background, offering the potential applicants an opportunity to learn more about the specific research. By forgoing the feature of a time limit, we enable the players to freely read these materials without losing their game time. To create an immersive experience, the game starts and ends with videos of Dr. Dark and the student characters who try to stop him. Additionally, the players are guided by a character of Dr. Dark’s PhD student, implemented in the form of explanatory voiceovers for the puzzles and a “Hint”button.

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