

// SLIDE HOLDER AND COVER PLATE FOR THE UPTAKE OF OBJECTS FOR MICROSCOPIC EXAMINATION BY MICROSCOPY

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BACKGROUND

An essential tool for the examination of objects in the field of microscopy are carriers on which the object to be examined is positioned. The object is positioned on these usually rectangular glass plates, also known as microscope slides, and is usually placed in a solution, commonly water or immersion oil, and then, for example closed with another transparent cover plate, usually cover glass. The microscope slide prepared in this way is then usually fastened to the microscope stage of the microscope with clamping holders during microscopy. The cover plate is intended to prevent the object to be examined from drying out. In addition, the cover plate ensures that the light emerges evenly from the specimen and enters the microscope objective. Observed organisms can freely move in all directions without being potentially damaged by a cover slide.

PROBLEM

Usually the object to be examined is positioned on microscope slides within in a solution like water or immersion oil, covered with another transparent cover plate, and fastened to the microscope. A common problem when using cover plates is that these thin plates are crushed by the movement of the microscopes objective, when setting the desired magnification and depth of field. Furthermore, when examining larger and thicker objects, a larger gap may remain between the cover plate and the slide, so that this gap cannot be filled evenly with liquid or immersion oil. Organisms under observation are usually restricted in their movement and subject to being damaged by a cover slide.

SOLUTION

The purpose of this invention is therefore to provide a holder for microscopy slides, in particular for light microscopy, and to reduce mechanical destruction of the cover plate by the objective of the microscope. Furthermore, the invention provides a holder, which allows closing completely the gap between the slide and the cover plate. Thus, a frame-like holder is created, enabling a closed observation system and reaction space for the object. This closed reaction chamber makes it possible to simultaneously adjust a change in the



Forschungszentrum Jülich GmbH

Dennis Oliveira
+49 2461/61-96831
d.oliveira@fz-juelich.de
www.fz-juelich.de

DEVELOPMENT STATUS

Demonstration model

CATEGORIES

//Physical sciences //Optics,
photonics and laser technology //Life
Sciences //Research tools

environmental conditions in the reaction chamber during microscopic examinations and to record the reactions of the object to these changes microscopically. For example, a current can be applied to the reaction chamber by electrodes. Furthermore, a temperature control of the chamber is possible by connecting a cooling and/or heating unit to the construction. Moreover this construction allows to pass reaction solutions, such as saline solution or dye solution, through the reaction chamber.

SCOPE OF APPLICATION

The slides described here can be used for all areas of microscopy, independent of the size of the object.
