TECHNOLOGY OFFER

Łukasiewicz
Institute of Microelectronics and Photonics

Positioning overlay

Who are we?

Łukasiewicz – Institute of Microelectronics and Photonics, based in Poland (Warsaw), is a part of Łukasiewicz Research Network - one of the largest European organizations for applied research. Łukasiewicz – IMiF operates under the formula Science is Business and its strategy is to play a central role in the innovation process towards R&D for industry and business. One of the Institute's main areas of activity is infrared photonics. The Research Group carries out R&D work in topics that belong mainly to cascade lasers and infrared detectors. The group has the competence and a complete technological line for the manufacture of optoelectronic semiconductor devices: from the design of the device and the growth of the crystal structure, through the manufacture of the device ending with complex characterization.

Utility model information

Technology readiness level: 6

Title: Positioning overlay

Patent number: Ru.073237

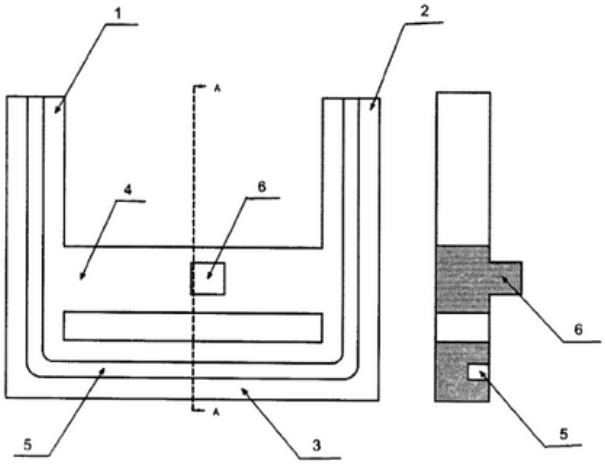
Priority Date: 10.03.2021

Inventors: Krzysztof Michalak, Joanna Branas, Lech Rządca

Owners: Łukasiewicz - IMiF

Jurisdictions: Poland

The subject of the utility model is a positioning overlay that facilitates the proper positioning of a laser structure placed on a radiator inside an optoelectronic enclosure.



Choosing the right position of the radiator and thus the laser/laser structure inside the optoelectronic enclosure is very important, since the radiator, in addition to the cooling function also serves as the base/holder to which the laser is permanently attached.

Our goal was to develop a tool in the form of a positioning overlay that will enable accurate and repeatable positioning of a radiator with a laser structure in an optoelectronic enclosure. Such a tool will significantly shorten the assembly time as well as allow to commercially offer a product characterized by repeatable parameters in small batch production conditions.

Sourse: https://api-ewyszukiwarka.pue.uprp.gov.pl/api/collection/e7f4b37f3ce916f7f226dffa296f2e8f

Technology Summary

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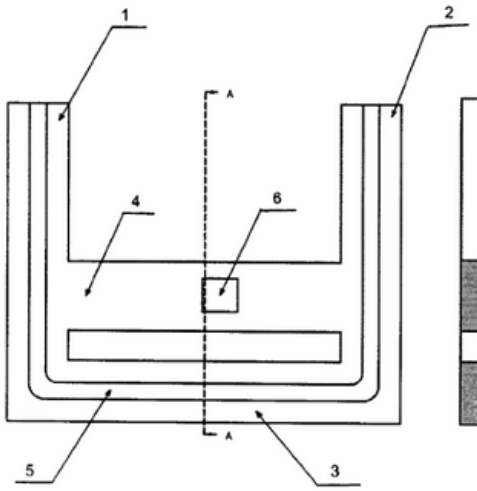
The potential behind the technology

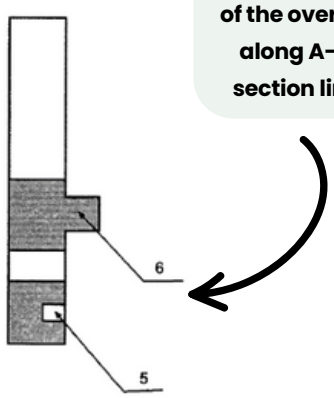
The proposed overlay has a simple design and its use does not require defined mounting pads. It allows accurate and fast centering of the radiator using a single contact point between the overlay and the radiator, at a relatively large distance from the solder material and the walls of the optoelectronic enclosure. The design of our solution also allows for relatively quick modifications if the need arises to fit a non-standard sized enclosures.

Construction

Our overlay has three sides (1, 2, 3), with two sides (1 and 2) being parallel to each other and connected to each other in the middle by a connecting beam (4). Meanwhile, the third side (3) is perpendicular to the other two sides and connecting them on one side. In all three sides of the overlay, there is a bump (5) with a depth close to half the thickness of the sides and with a width slightly greater than the width of the wall of the optoelectronic encloure on which it will be slid. In addition, on the same side of the frame, a protrusion (6) with dimensions slightly smaller than the dimensions of the opening in the centered radiator and with a height greater than half the thickness of the connecting beam (4) is located on the connecting beam (4).

top view of the overlay





cross-section of the overlay along A-A section line

Application

Positioning overlay can be used in laser structures inside optoelectronic enclosures.

Collaboration type

License agreement or sale agreement

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