D. Ghitu Institute of Electronic Engineering and Nanotechnology

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Title	**Ultraviolet (UV) photodetector**
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Patent no.	**Patent application : No.2139 / 2020**
Description EN	The UV domain of the optical spectrum is divided into the following subdomains: UV-A subdomain 400-320 nm, UV-B 320-280 nm, UV-C 280-200 nm, which correspond to the bactericidal domains, which is of major importance in the detection and optical radiation dosimetry in antibacterial treatment. The result of the invention consists in ensuring the selectivity of the photoreceptor to ultraviolet radiation for the subdomains of the optical spectrum A, B, C depending on the composition of the MgxZn1-xO layer by creating a bandgap gradient of at least $3*10^5$ eV/cm in the active region of the detector in the photoreceptor structure of the transparent-window film with a difference of the energy bands compared to the absorption film. This structure of the photoreceptor also maintains high photosensitivity to optical radiation. The low cost of the technology is ensured by using the sol-gel method of aerosol spraying or by centrifugation (spin-coating). The novelty of the invention consists in the deposition of sol-gel chemical solutions by aerosol spraying or by centrifugation (spin-coating) on an Si support of an absorption film with the composition Zn1-xMgxO with value x from the range 0 - 0.8, at the same time, between the absorption film and the support being deposited a transparent film of Zn1-x1Mgx1O with value x, which ensures an energy band at least 0.1 eV higher than that of the absorption film.
Class no.	**5. Industrial and laboratory equipments**