

Method of manufacturing an ionizing radiation detector based on a graphene field-effect transistor, according to which a reduced graphene oxide film is deposited onto the surface of an oxidized porous silicon layer on a silicon substrate used as a gate of the field-effect transistor, and source and drain electrical contacts are formed on the surface of said film. Silver is introduced into the porous silicon layer during the passage of a direct electric current of 1 mA for 5 s. The porous silicon layer is anodically oxidized in an aqueous solution of hydrogen peroxide during the passage of a direct electric current of 20 mA for 1 min.