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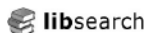
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Professor

Leszek A. Dobrzański M Dr hc
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Dear Readers!

Handing over to P.T. Readers the next volume of Archives of Materials Science and Engineering at the same time I would like to inform that we publish in it as usual a few next scientific papers. Encouraging P.T. Authors to submit papers for the publication, today I recommend reading these research papers. I hope that the reading of this issue will bring you satisfaction.



The paper entitled "TEM investigations of laser texturized polycrystalline silicon solar cell" by J. Konieczny, L.A. Dobrzański, A. Drygała and J. Lełątko on a page 22 presents investigation results of phase transformation of the surface structure of polycrystalline silicon solar cell. The surface of boron doped polycrystalline silicon wafers were texturised by means of diode-pumped pulsed neodymium-doped yttrium aluminium garnet laser crystal (Nd:YAG). Investigations to observe the changes that occurred after laser treatment of the surface layer were carried out on transmission electron microscope (TEM). Changes in microstructure of the surface layer of solar cells under the influence of the laser beam are presented using the analysis phase and dislocations present in the microstructure. Observations were carried out on prepared thin foils. Moreover, diffraction patterns from selected regions of textured wafers were solved to qualify phase transformations under influence of laser beam. Investigations were carried out on the Transmission Electron Microscope JEM 3010 supplied by JEOL with 300 kV accelerating voltage equipped with an electronic camera configured with a computer. The microstructure was obtained in the bright field image as well dark field working in a magnification range of 10000x to ca. 100000x. Phases identification was performed by means of selected area diffraction (SAD) method, where for diffraction pattern calculations the computer software "Eldy" was used, kindly supplied by the Institute of Materials Science, the University of Silesia. The range of possible applications increases for example as materials for solar cells placed on building constructions, elements in electronics and construction parts in automobile industry. The research included the analysis of the influence of laser treatment conditions on geometry, roughness and size of laser made surface texture of silicon wafer applied for solar cells.