

To: Materials Science in Semiconductor Processing Editorial Board
Subject: Article Submit

Dear Editors,

Enclosed with this letter you will find the electronic submission of manuscript entitled “Deep neural network method for predicting the iron concentration in silicon solar cells by current-voltage characteristics” O. Olikh, O. Lozitsky, and O. Zavhorodnii.

This is an original paper which has not been simultaneously submitted as a whole or in part anywhere else. No conflict of interest exists in the submission of this manuscript.

It is well known that impurities are crucial for the solar cells performance. There are many experimental methods for impurity evaluation, such as the infrared spectroscopy, deep level transient spectroscopy, photoluminescence, thermally stimulated capacitance and current, secondary ion mass spectrometry etc. These methods are complicated enough and demand a special setup. At the same time, there is a simpler and commonly used technique, which is the analysis of the solar cell current–voltage characteristics. The present manuscript describes the method of contaminant concentration evaluation by using the ideality factor value, which extracted from current-voltage curve. The method is based on results of numerical simulation of solar cells and use a deep neural network. We believe that such way of defect characterisation would be of interest to the readers.

We would very much appreciate if you would consider the manuscript for publication in the *Materials Science in Semiconductor Processing*.

Sincerely yours,
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