NREL
NATIONAL RENEWABLE ENERGY LABORATORY

New Approaches for Passivation of Crystalline and Amorphous Silicon

Cooperative Research and Development Final Report

CRADA Number: CRD-09-351

NREL Technical Contact: Bhushan Sopori

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Cooperative Research and Development Final Report

In accordance with Requirements set forth in Article XI.A(3) of the CRADA document, this document is the final CRADA report, including a list of Subject Inventions, to be forwarded to the Office of Science and Technical Information as part of the commitment to the public to demonstrate results of federally funded research.

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CRADA Title: New Approaches for Passivation of Crystalline and Amorphous Silicon

Parties to the Agreement: Mallinckrodt Baker

Joint Work Statement Funding Table showing DOE commitment:

Estimated Costs	NREL Shared Resources
Year 1	$ 30,000.00
Year 2	$ 20,000.00
Year 3	$ 00.00
TOTALS	$ 50,000.00

Abstract of CRADA work:

New approaches of passivating crystalline, multicrystalline, and amorphous silicon will be explored. These will include the use of aqueous solution of KCN and a proprietary composition formulated by Mallinckrodt Baker, Inc. The surface passivation will be compared with that provided by an iodine-ethanol solution, and bulk passivation will be compared with that of H-passivation obtained by silicon nitride, in a fire-through process.

Summary of Research Results:

This work determined that KCN-based aqueous solution provided a good passivation if the wafer has a thin oxide layer. In the absence of the oxide, KCN passivation was not effective.

Subject Inventions Listing: None

Report Date: 7-30-2012 **Responsible Technical Contact at Alliance/NREL**: Bhushan Sopori

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