



# **New Approaches for Passivation of Crystalline and Amorphous Silicon**

**Cooperative Research and Development  
Final Report**

**CRADA Number: CRD-09-351**

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**CRADA Report**  
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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.

**CRADA Number:** CRD-09-351

**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:**

<b>Estimated Costs</b>	<b>NREL Shared Resources</b>
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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