



# PATENT

## TECHNOLOGY SUMMARY

### U.S. AIR FORCE TECHNOLOGY TRANSFER PROGRAM OFFICE

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**PATENT NUMBER:**

8974899

**TECHNOLOGY NAME:**

System and Method for Identifying Electrical Properties of Integrate Circuits

**INVENTOR(S):**

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**TECHNICAL PROJECT OFFICE:**

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**PATENT DATE:**

March 2015

**SOURCE:**

US Patent Office

## PSEUDOMORPHIC GLASS

### for Space Solar Cells

#### BACKGROUND

The invention relates to coverglass materials for spacecraft solar arrays and to a new coverglass material that provides high ultraviolet spectral transmissivity in a robust, flexible and fully encapsulating format.

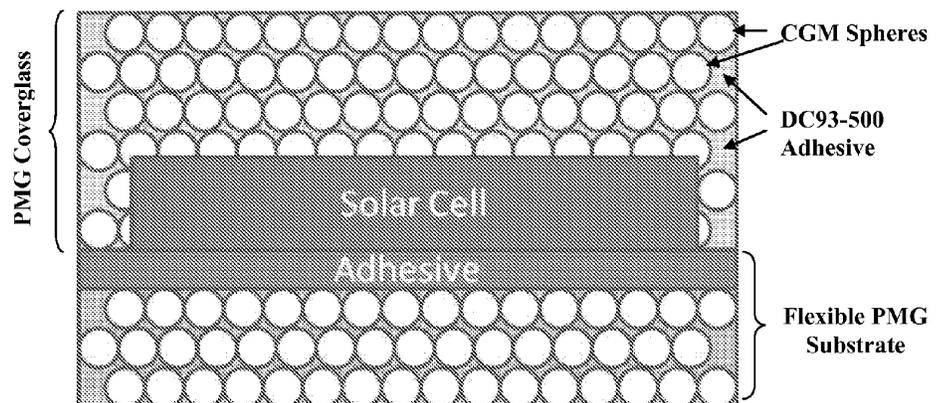
Although coverglass materials have worked satisfactorily for existing solar cell technologies, their cost, fragility, and lack of complete encapsulation (the metal cell to cell interconnects are not covered by the coverglass) have led many organizations to search for a simpler alternative.

In addition, space solar cell developers have indicated that advanced solar cells will require access to a wider spectral range than current coverglass materials provide. These efforts have focused on

either silicones or polyimide materials which could be applied in a variety of methods. To date, none have been developed which have the needed spectral transmissivity and environmental stability for the space environment.

#### INVENTION SUMMARY

PseudoMorphic Glass (PMG) uses conventional solar array materials (coverglasses and adhesives) but in a novel hybrid format that leverages the favorable properties of each. PMG consists of small diameter spheres of traditional coverglass materials, such as ceria-doped borosilicate glass and/or fused silica, imbedded in a matrix of either coverglass adhesives, such as DC93-500, a clear silicon adhesive by Dow Corning, or substrate replacement materials, such as Kapton.



*Flexible Solar Panel Cross-section with PseudoMorphic Glass Coverglass and Substrate.  
 (Courtesy illustration)*

### CONTACT INFORMATION

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