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MARYLAND SECTION
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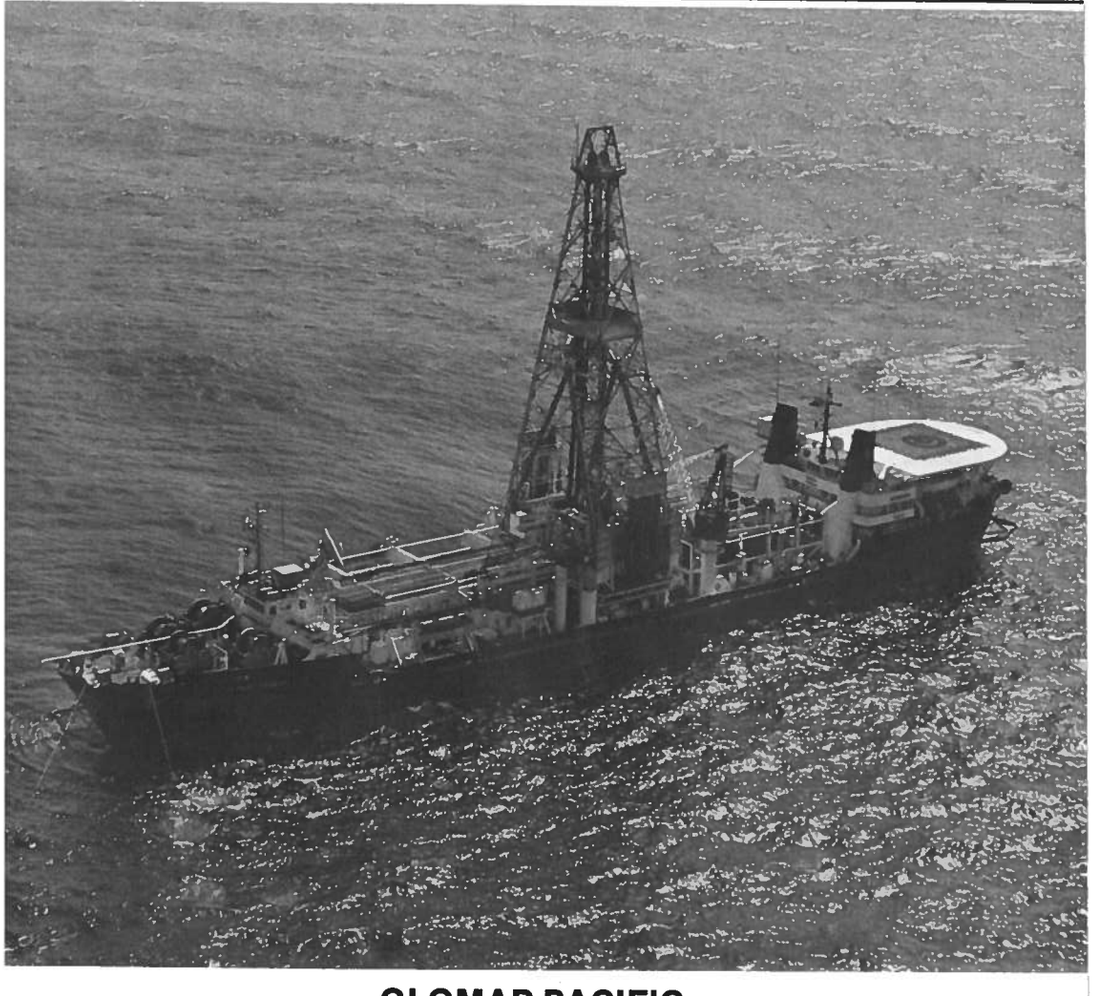

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GEORGE M. STORTI

George Storti received B.S. and M.S. degrees in physics from Worcester Polytechnic Institute in 1961 and 1963, respectively. He was employed by the NASA - Langley Research Center in Hampton, Virginia, where he investigated radiation effects on spacecraft materials.

He went next to the University of Delaware where he received a Ph.D. in solid state physics in 1974. He remained at Delaware, on the staff of the Institute of Energy Conversion, where he investigated performance characteristics of copper sulfide - cadmium sulfide and copper sulfide - cadmium zinc sulfide solar cells and was directly involved in efforts to increase the efficiencies of these cells.

Dr. Storti joined the staff of Solarex in Rockville in 1978 as Manager of the Solar Cell Measurements Group. In late 1978 he became Manager of the Device Research Group where his responsibilities have included managerial and technical oversight of numerous government contracts and internal programs whose primary goals have been to increase solar cell efficiencies and to reduce fabrication costs. Since July of 1980 he has been Manager of the Technical Development Group, where his main responsibilities are technology development and transfer.

EFFICIENCY LIMITING MECHANISMS IN POLYCRYSTALLINE SILICON SOLAR CELLS

In a joint program involving the Solarex Corporation and the University of Maryland, the mechanisms limiting efficiency in solar cells fabricated from cast polycrystalline silicon have been investigated.

It has been determined that grain boundaries have a minimal influence on overall cell characteristics because of the grain size, even though effects at boundaries can be quite dramatic. Evidence has been obtained that the structures within grains and at grain boundaries have a major influence on the device characteristics.

The implication of these observations is that polycrystalline material can be fabricated into solar cells having efficiencies equivalent to those of single crystal cells. Results of recent fabrication efforts which resulted in a 17% efficient polycrystalline silicon solar cell will be presented.

KENNETH A. SCHWARZ

Kenneth A. Schwarz is the petroleum geologist for the State of Maryland. He is on the staff of the Maryland Geological Survey in Baltimore where he is involved in monitoring offshore drilling activity in the mid-Atlantic, onshore activity in western Maryland, and low to moderate geothermal energy drilling activity on the Eastern Shore. His work also includes updating topographic base maps, dealing with interstate and intrastate political boundary surveys, and a wide range of other geologically related investigations.

Born in Buffalo, New York, he received his B.S. in geology in 1954 from the University of Notre Dame where he also received his Air Force commission. He flew jet reconnaissance aircraft until 1958 when he joined Amoco Production Company as a subsurface petroleum exploration geologist in the Gulf Coast, working onshore and offshore of Texas, Louisiana, Mississippi and Alabama. He did graduate work at the University of Kansas and the University of Houston and earned his M.S. in geology at Tulane University in New Orleans in 1973. He entered state service in 1977.

NOVEMBER MEETING

DATE:

Wednesday, November 19, 1980

PLACE:

Knott Science Center
The College of Notre Dame
of Maryland
North Charles Street
Baltimore

SPEAKERS AND TOPICS:

6:00 pm
George Storti
Solarex Corporation
Efficiency Limiting Mechanisms
in Polycrystalline Silicon
Solar Cells

8:30 pm
Kenneth Schwarz
Maryland Geological Survey
Petroleum Exploration in the
Baltimore Canyon

GEORGE STORTI

KENNETH SCHWARZ

COCKTAILS AND DINNER:

Doyle Building Dining Room

Cocktails 7:00 - 7:30 pm

Hot buffet dinner (7:30) $8.00 per person, except spouses, retired chemists and students may attend the dinner for $6.00

Please make reservations by mailing checks to

Elwin C. Penski
2515 Jerusalem Road
Joppa, MD 21085

by November 10. Late reservations may be made by calling

879-8589 (Baltimore local)
or 671-2243 (8:00 to 4:30 weekdays)
877-2923 (evenings after 7:00)

before November 12.

The exact number of dinner reservations must be known before November 12. Mailing checks early will reduce the length of lines at the door, make for a smoother operation, and assure your being served.

It is not necessary to be a member of the American Chemical Society to attend. You may attend the lectures without attending the dinner.

HYDROCARBON EXPLORATION IN THE BALTIMORE CANYON MID-ATLANTIC OUTER CONTINENTAL SHELF

Sedimentary rocks which have been deposited in large basins 10,000 feet or more in thickness are the best place to search for hydrocarbons. Three prerequisites are necessary in these basins to have the potential of forming an oil or gas field: source rocks (usually organic-rich shales), reservoir rocks (rocks which have porosity and permeability) and traps, which are geometric configurations of rocks that act to localize and seal the reservoir, thus preventing hydrocarbons from leaking to the surface.

There are at least six sedimentary basins along the Atlantic Coast of North America. The Baltimore Canyon Trough is a local geographic term applied to one of these basins which is on the continental shelf off the middle Atlantic states. It has over 40,000 feet of sedimentary rocks and several large structures as seen on seismic sections. The B-2 and B-3 COST Wells (Continental Offshore Stratigraphic Test), indicated that there are gas prone source rocks and sufficient reservoir rocks in this basin. In mid 1976 and in early 1979 a total of nearly $1.2 billion was given to the government for federal leases on 750,000 acres offshore New Jersey, Delaware, Maryland and Virginia. To date, drilling has disclosed only one area that may have gas reservoirs in commercial quantities.

Searching for petroleum in exploration frontiers is a very expensive and high risk business. Rigs costing around $100,000 per day have fifty to one odds against finding commercial reserves. But the petroleum industry is taking this gamble in hopes of finding significant amounts of oil and gas for the future.

MARYLAND SECTION FUTURE PROGRAM

Date	Location	Speakers	Topic
December 10	College of Notre Dame	Maryland Chemist Award	
January 21	Univ. of Md. Balto. County	Isidore Adler (Univ. of Maryland)	Geochemcial Exploration of the Planets