

## ONLY HUMAN

## Harnessing the Sun

By Sidney Fields

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Ever since she was a college freshman, Maria Telkes has been making heat while the sun shines.

In and out of labs Dr. Telkes has been trapping the sun's rays to warm ovens and houses and to make fresh water and electricity.

"Within 10 years," she promised, "we should have solar traps on roofs to convert sunshine into electricity for our homes and even for a whole community."

She's one of the 500 lady engineers and scientists from 24 countries now meeting in New York

energy conversion program, she asked if she could work in it. She did, for 13 years. Then NYU called her to organize their solar energy projects and she ran it for five years.

At MIT she developed solar distillers which used the sun's rays to convert sea water to fresh water, an accomplishment that earned her the Achievement Award from the Society of Women Engineers. Distillers were used on life rafts during World War II.

"And they can be used in arid areas like Arizona and New Mexico and Southern California," she said, "to make brackish water or sea water fresh, just for use in homes."

**Solar Cooking Stove**

While at MIT, Dr. Telkes built a thermo-generator to convert solar heat into electricity. It's being further developed for use in satellites. At NYU she built a practical solar cooking stove.

At Dover, Mass., 16 years ago, she constructed a house heated only by solar heat. Four years ago she completed a solar energy center at Princeton, N.J., with solar heated rooms, swimming pool and labs; solar water heaters, dryers for fruit and vegetables and solar cooking stoves.

"Can you imagine what a fantastic boon a solar stove would be," she said, "in countries where there is no fuel or electricity?"

There's something she's always wondered about: Why natives in the Middle East use camel dung for fuel.

"If they can't use the oil in the wells," she said, "why can't they use the hot sun overhead?"



Dr. Maria Telkes—a solar vision.

in their first international conference. The conference is sponsored by the Society of Women Engineers.

Dr. Telkes lives in Allentown, Pa., and works in nearby Fogelsville as director of research and development for Cryo-Therm.

**Essential for Missiles**

"Cryo means cold and therm means hot," she said, "so I call it the Hot and Cold company."

She's now concerned with heat storage units that keep the delicate guidance systems in Polaris, Minuteman and Apollo missiles at constant temperatures so they function perfectly.

"Once they needed two men just to tend to the temperatures when they shipped the systems," Dr. Telkes said. "In heat storage units they don't need chaperones. We've shipped guidance systems for over 3,000 Polaris missiles without one failure."

There are other applications for her storage units: In big cities generators are overworked during the day to meet the demand for electricity. But at night generators are slowed down or idled.

"Doesn't it make more sense," Dr. Telkes asked, "to keep the generators working at night and storing the electricity for use during the day?"

**Born in Budapest**

When she was 10 she built her own little chemistry lab in her home in Budapest, where she was born. Her father, a bank employe, encouraged such pursuits. In her first year at the University of Budapest, from which she got her Ph.D., she came across a little volume, "Energy Sources of the Future," by a Kornel Zelowitch, which determined her life work.

"It described the experiments in solar energy going on," Dr. Telkes recalled. "Mostly in America. So I came here as soon as I could to visit an uncle of mine who had married an American girl. You know, I still have that book."

When she heard that MIT had started a solar