

## In this issue

### Solar photovoltaics

In India as soon as one hears the phrase 'solar energy' the mind slips into a well-oiled groove. Visions of 'appropriate technology' arise. Unwieldy structures of wood and galvanized iron covered with aluminum foil in which blackened vessels are kept to boil rice seem to dot the open countryside. Unfortunately, no low cost method of utilizing solar energy has succeeded commercially. The best way to use solar energy is to convert it to electricity. While cost of photovoltaics as such is a major deterrent worldwide, the lack of the basic technology itself is of major concern in India.

India now seems poised to take its place in the sun. The Central Electronics Limited (CEL) under the Department of Scientific and Industrial Research, Ministry of Science and Technology has made giant strides in the indigenous development of photovoltaic technology. CEL recently won a prestigious international tender against stiff competition from developed countries.

Ashok Parthasarathy has always been a champion of indigenous technology. Under his guidance, both the National Research Development Corporation and the CEL have done a lot to commercialize indigenous technologies for exploitation not only in India but abroad as well.

Parthasarathy *et al.* describe in their article (page 974) how they traversed the thorny path from the Physics Lab to the state-of-the-art photo voltaics industry.

Amorphous silicon cells cost less but have a low efficiency. Polycrystalline silicon cells are much more efficient but at a much higher cost. Thin film polycrystalline silicon cells show great promise of combining high efficiency with a relatively low cost.

India has a vast potential for tapping solar energy. The efforts of CEL should further us considerably towards achieving this goal.

A. V. Ramani

### Mushrooms: Science and myth

Mushrooms, a complex and advanced group of fungi, have been the centre of folklore, legends and magic from time immemorial. They have been a source of misconception and superstition in many a society, probably because of their association with putrescence and decay and because of their often unpleasant colour and fetid smell. As a group, they excel other plants in their sheer diversity of form, smell, colour and function. They have some of the most enviable names such as earth ball, the blusher, the false blusher, law

yer's wig, death cap etc. Botanically the mushrooms that we see soon after a rain, are the fruiting bodies of the fungi. While most of the mushrooms are saprophytic, a few form beneficial association with other plants and fewer still are parasitic.

*Amanita muscaria*, commonly known as the fly-agaric is one of the most colourful mushrooms and is known for its hallucinogenic property. This mushroom has entered into the folklore and ritual of all major religions. Our own 'soma rasa' is believed to be a concoction derived from this fungus. In fact the Rigveda contains hymns in praise of this concoction and is said to accurately depict the morphological characteristics of the fly-agaric. However, not all mushrooms impart such intoxication. Many contain nearly fatal toxins, which have been used time and again in history to avenge defeat. Infact on this John Gerard, as early as 1597, warned as mildly as one could 'a few of them are good to be eaten and most of them do suffocate and strangle the eater!' In his article (page 986), C. V. Subramanian reviews the fascinating story of these mushrooms blending the science and the myths. A world of opportunity to ponder over and work in these exciting systems is thus unravelled.

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