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PROCEEDINGS OF THE 10TH SEDE BOQER SYMPOSIUM ON SOLAR ELECTRICITY PRODUCTION

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Editor

D. FAIMAN

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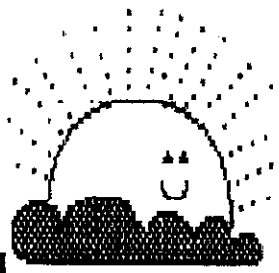

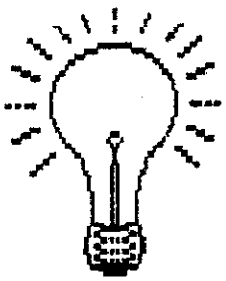

INTRODUCTION

The 10th Sede Boqer Symposium on Solar Electricity Production took place exactly 15 years - almost to the date - after this unique series started out in February 1986. The uniqueness of these symposia lies in the fact that they combine solar-thermal and photovoltaic presentations (and also, occasionally, others) within a single event without parallel sessions.

The 10th Sede Boqer Symposium broke new ground in a number of exciting areas, both in the reviews given by our key-note speakers and in several of the frontal presentations. Among the latter one may single out; the paper by Daniel Feuermann and Jeff Gordon, which discussed the possibility of constructing effectively large parabolic dishes with extremely high solar concentration factors, out of many, small, sealed, "mini-dish" units; the country's first solar energy educational program for *elementary* schools, presented by Muhamad Hugerat; and the first systematic outdoor tests of polymer solar cells, by Eugene Katz and his student, Sachetan Tuladhar.

Among our invited speakers, Amnon Einav, Chief Scientist at the Ministry of National Infrastructures, presented an in-depth review of Israel's present energy position and various options for the coming years.

Harald Ries, from Germany, "amazed" us with a new aspect of optical design that has been pioneered by him and his colleagues. According to their scheme, electromagnetic energy (e.g. in the form of light) coming from a source of any specified geometrical distribution can be sharply focused onto a target of any given shape by using special lenses that could not have been envisioned before the onset of modern technology (computers and materials).

Photovoltaic roofs have now reached maturity, as demonstrated, most convincingly, by Frederik Leenders, from the Netherlands, who presented design details and first performance results from "Nieuwland", Europe's first photovoltaic city. This project is a splendid example of how domestic roof tops may be employed in an aesthetically-pleasing manner, to inject megawatts of power into the electricity grid.

Lastly, from Australia, David Mills, the past president of ISES, summarized the present situation of solar-thermal power and the various directions along which it might advance during the coming years. As always, with David's talks, the latest techniques in computer graphics are enlisted to bring across his points, and this presentation was no exception.

If we survey all that has happened to solar technology during the 15 years of these symposia, we may observe steady progress in photovoltaics, albeit, not in the direction of central grid-connected systems as were envisaged at the start. PV is still too expensive to compete with fossil fuel in that arena - by a factor of typically 5. Instead, however, there is now a thriving PV industry with ever-increasing niche markets world-wide. On the other hand, solar thermal technology, which took a serious blow with the demise of the Luz Corporation, has still to recover. Although all of the Luz plants are still operative, no new solar-thermal power plants have been built since SEGS IX was completed at Harper Lake, California, more than a decade ago.

Finally, it is a pleasure to acknowledge our sponsors: Ben-Gurion University of the Negev, The Blaustein International Center for Desert Studies, the Israel Power Systems Chapter of IEEE, and the Israel Section of ISES. Furthermore, as always, these symposia would not be possible without the dedication and volunteer spirit of a number of people, specifically: Dov Bukovza, Shoshana Dann, Ofra Faiman, Shlomo Kabalo, Vladimir Melnichak and Kathi Pearlmutter. To them I owe a special note of appreciation.

David Faiman
Sede Boqer, August 2001

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