

Fraunhofer and MIT establish research center

The research scientists of the Fraunhofer Institute for Solar Energy Systems ISE are starting a close cooperation with the scientists at the Massachusetts Institute of Technology MIT. The new Fraunhofer Center for Sustainable Energy Systems will be located in the immediate vicinity of the MIT campus.

The Americans are still the world champions in energy consumption, but global warming is causing people to change their way of thinking – even in the USA. At renowned universities like MIT in Cambridge, research scientists are working intensively on new concepts to increase energy efficiency, save energy and harness renewable energy sources. Their aim is not just to develop new technologies, but also to implement existing technical solutions as marketable products – for example energy-saving houses and cost-efficient solar-energy systems. “MIT will cooperate closely with Fraunhofer in this field,” explains Professor Hans-Jörg Bullinger, President of the Fraunhofer-Gesellschaft. “The new cooperation proves that our know-how is highly appreciated by elite American universities.”

Alternative energy and energy-saving techniques have so far been a niche market in the USA, but in the opinion of Prof. Eicke R. Weber, Head of the Fraunhofer Institute for Solar Energy Systems ISE in Freiburg, that is about to change. “Up to now the market for solar energy has been disproportionately low in the USA. In our work with the research scientists at MIT, we would like to create mechanisms which will support dynamic growth in this area.” The partners in the cooperation complement each other ideally: “ISE is one of the world’s leading institutions in the field of energy efficiency and utilization of renewable energy, but our experience has been primarily focused in Europe. The economic and climatic conditions are different in the USA, as are the standards and regulations, and we benefit from gathering this experience locally,” states Prof. Roland Schindler, who has been ap-

The Massachusetts Institute of Technology is the home of numerous famous researchers.

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pointed executive director of the Fraunhofer Center for Sustainable Energy Systems at MIT. “The laboratory will enable us to expand our portfolio and help German companies gain a foothold in the U.S. market.”

Nolan Browne, Director of Business Development for Energy Sectors at the new Fraunhofer Center for Sustainable Energy, believes that MIT will also benefit greatly from the cooperation: “Our aim is to create a bridge between research and successful commercialization.” The auspices are good: Professor Tonio Buonassisi, the cooperation partner at MIT, was a member of Prof. Weber’s former research team at UC Berkeley.

The first research projects are already being prepared. “One of the key areas of work will be to advance the development of solar technology,” explains Browne. “We need cheaper components and a better output, because solar power generation will only be successful on the huge U.S. market if it can compete economically.” It will be necessary not only to improve conventional techniques but also to strike out on new paths. For example, smart circuits and software programs could control and optimize the output of solar power modules, while new materials and processes could make pro-

duction more economic. Simple assembly systems could reduce installation costs.

Energy-efficient construction will be another major aspect of the new laboratory’s work. Here too, experts anticipate that demand in the USA will increase over the coming decades in the wake of rising energy prices. “We have many years of experience in the fields of building construction and renovation which focus on thermal insulation, reducing electricity consumption and saving heating costs,” states Schindler.

Activities at the new Fraunhofer Center for Sustainable Energy Systems CSE will also include the development and optimization of production processes for alternative energy technologies – for example, fuel cells. The research scientists intend to test the functioning of newly developed components with rapid prototyping and to reduce production costs using packaging technology. Collaborative projects are also planned with the neighboring Fraunhofer Center for Manufacturing Innovation CMI, one of the six institutes already established by Fraunhofer USA. “If everyone contributes their specialist knowledge, we will create a win-win situation,” concludes Browne.

Monika Weiner

