



SCHOTT Solar joins IMEC research program on silicon photovoltaics

Leuven, Belgium – June 3, 2009 – SCHOTT Solar, a leading photovoltaics manufacturer, entered into a 3 year research partnership with IMEC, Europe’s leading independent nanoelectronics research center. SCHOTT Solar joins IMEC’s newly launched silicon photovoltaics industrial affiliation program (IIAP). Within this multi-partner R&D program, IMEC aims to explore and develop advanced process technologies to fuel the steep market growth of silicon solar cells in a sustainable way. The program will concentrate on a sharp reduction in silicon use, whilst increasing cell efficiency and hence further lowering substantially the cost per Watt peak.



By joining the silicon photovoltaics IIAP, researchers from SCHOTT Solar will be able to closely collaborate with IMEC’s research team to build up fundamental understanding and develop robust solutions for next-generation silicon based solar cells. The program will bring together silicon solar cell manufacturers, equipment and material suppliers and is based on a sharing of intellectual property, talent, risk and cost.

“We are excited that one of the leading photovoltaics manufacturers joins our multi-partner program. Building on our 25 years track record in silicon solar cells and our successful experience with Industrial Affiliation Programs on CMOS scaling, we are confident that we will provide our partners a dynamic research platform for accelerated process development;” said Jef Poortmans, Program Director Solar+ at IMEC.

“With over 50 years of experience in the solar market, including cell technology, SCHOTT Solar is established leader in the solar industry. In the highly dynamic market of solar power, short time to market for new products is essential. Therefore, SCHOTT Solar is pleased to announce that the company has joined the high-level IIAP R&D program



at IMEC, the leading research institute in the field. We support IMEC's ambitious goals and their work towards creating success their partners," said Dr. Martin Heming, Chief Executive Officer at SCHOTT Solar AG.



Crystalline silicon solar cells are the workhorse of the photovoltaic industry, having a market share of more than 90% of the world production of solar cells. Within its IIAP, IMEC aims to reduce both the cost of producing crystalline silicon solar cells and the amount of Si/Watt that is needed by half. Efficiencies of about 20% are targeted.

IMEC's program will explore both wafer-based bulk silicon solar cells and epitaxial cells. Within the bulk-silicon solar cell sub-program, generic process technology crucial for increased efficiency and manufacturing cost reduction will be developed. The active silicon layer thickness will be reduced from 150µm down to 40µm. To meet efficiencies of about 20%, alternative back-side dielectric stacks and interdigitated back-side contacts (i-BC) will be introduced in thin-wafers using a PERL-style (PERL = passivated emitter and rear local back surface field) concept in an industrial process flow. Cell module integration will be investigated since reduced wafer thickness will impose specific integration requirements. As the guaranteed lifetime of cells and modules will further increase in the next decade from 20-25 years up to 35 years and more, reliability will also be assessed in depth. And new methods to realize and handle wafers as thin as 40µm will be pursued. The potential of the technology will be benchmarked in small area lab cells and large-area solar cells.

Besides the generic bulk silicon research which is of relevance for any crystalline silicon wafer-based solar cell technology, epitaxial thin-film (<20µm) silicon solar cells on low-cost silicon carrier will also be developed. Epitaxial thin-film silicon solar cell technology is expected to be the intermediate step before mainstream fabs will switch from bulk silicon solar cells to thin-film solar cells. The process is generically similar to the bulk process and the epi-process can be implemented with limited equipment investment. To



improve the optical confinement of light in the active part of the cell, a buried porous Si reflector will be developed.

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Further information is available under www.schottsolar.com

Press photographs are available for downloading under www.schott-pictures.net

You will also find this press release under <http://www.ffpress.net/Kunde/SOLE/>



About IMEC

IMEC is a world-leading independent research center in nanoelectronics and nanotechnology. IMEC vzw is headquartered in Leuven, Belgium, has a sister company in the Netherlands, IMEC-NL, offices in the US, China and Taiwan, and representatives in Japan. Its staff of more than 1650 people includes about 550 industrial residents and guest researchers. In 2008, its revenue (P&L) was EUR 270 million.

IMEC's More Moore research aims at semiconductor scaling towards sub-32nm nodes. With its More than Moore research, IMEC looks into technologies for nomadic embedded systems, wireless autonomous transducer solutions, biomedical electronics, photovoltaics, organic electronics and GaN power electronics.

IMEC's research bridges the gap between fundamental research at universities and technology development in industry. Its unique balance of processing and system know-how, intellectual property portfolio, state-of-the-art infrastructure and its strong network worldwide position IMEC as a key partner for shaping technologies for future systems.

Further information on IMEC can be found at www.imec.be.

About SCHOTT Solar

SCHOTT Solar, with its high quality products, enables the potential of the sun as a nearly inexhaustible source of energy to be utilized. And it's for exactly that reason that SCHOTT Solar produces important components for photovoltaic applications and solar energy plants. In the photovoltaic industry, the company is one of the few integrated manufacturers of crystalline silicon wafers, cells and modules. The production of the wafers is ensured by the WACKER SCHOTT Solar joint venture, which also secures the supply of silicon, enabling long-term growth. In thin-film technology, SCHOTT Solar also describes itself an advanced supplier due to having over twenty years of experience. And in the production of receivers for solar power plants, SCHOTT Solar sees itself as a market and technology leader. The receivers are key components in large-scale power plants that generate electricity from solar energy centrally on the basis of parabolic



PRESS INFORMATION

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through technology and are able to supply entire cities with power. SCHOTT Solar has production facilities in Germany, the Czech Republic, the USA and Spain. The innovative power and technological competence of the company date back to the late 1950s. SCHOTT Solar GmbH is a wholly owned subsidiary of the international SCHOTT technology group. SCHOTT develops special materials, components and systems for the household appliance, pharmaceutical, solar energy, electronics, optical and automotive industries. With around 17,300 employees, the SCHOTT Group generated a worldwide turnover of about 2.2 billion euros in fiscal year 2007/2008.

Further information is available at www.schottsolar.com



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