

Press Release

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Union Minière Advanced Materials unit signs research contract with the European Space Agency (ESA)

UM Electro-Optic Materials, a business unit of Union Minière, was recently awarded a EUR 5.3 million research contract by ESTEC, the research and technology centre of the European Space Agency. This research contract for the joint development of germanium substrates for use in high efficiency solar cells will be financed by the ESA programme for technological development. Some of this research will be done in collaboration with external R&D institutes.

The successful collaboration between UM and ESA (ESTEC) dates back to 1993 and has already made an important contribution to the development of most of the solar cells currently in use in space.

Satellites play a very important role in the fast growing field of telecommunications. The technological requirements in the years to come will necessitate bigger satellites that can transmit more messages per unit of time. This means the satellites will need more electrical power and as a result the solar cells on these satellites will have to deliver more electricity for the same amount of solar radiation (higher conversion efficiency).

The modern solar cells for satellite communication consist of a number of thin layers with gallium arsenide deposited on a germanium disk (also called substrate). For the next generation of solar cells with a higher conversion efficiency more thin layers will have to be grown on a higher grade germanium substrate.

The development of a germanium substrate with a significantly better surface finish is the main target of this research programme. In addition to a better surface, thinner wafers are also required with the aim of reducing the weight of the solar cells and consequently the very high satellite launching cost.

UM Electro-Optic Materials is the global leader in the development and marketing of germanium substrates and is committed to retaining this position. Therefore it will incorporate any technological improvements derived from this research into all steps of its production process.

For more information, please contact

Press: Mrs Moniek DELVOU - Tel. +32 2 227 70 63 * +32 475 26 64 95 - moniek.delvou@um.be
Investor Relations: Mrs Isabelle MICHOTTE - Tel. +32 2 227 71 47 - isabelle.michotte@um.be

n.v. Union Minière s.a

Broekstraat 31 Rue du Marais • B-1000 Brussels, Belgium
Phone +32 2 227 70 63 • Fax +32 2 227 79 03 • Telex 34004 umb
VAT BE 401 574 852 • Bank 210-0053806-23 • TRB 85382
Internet www.um.be • e-mail info@um.be

PROFILE

Union Minière (UM) is an international metals and materials group, which strives to obtain leadership positions in selected markets. Its activities are centred on 3 main business groups: Copper & Precious Metals, Zinc and Advanced Materials. To ensure a rapid response to market openings, each business group is divided into several business units.

The UM Group has industrial operations in Europe, North America, Asia and Africa and serves a global customer base through an international sales network with offices in more than 25 countries.

The underlying principles of UM's strategy across the various business groups are a commitment to technological innovation, operational excellence, recycling and environmental responsibility.

The Group generated a turnover of EUR 3.8 billion in 2000. UM currently employs some 7,900 people.
