Latest News from Applied Multilayers

No.6

Applied Multilayers in £1.53M Thin Film Photovoltaic Project

A consortium of Applied Multilayers Ltd, Ove Arup and Partners, Pilkington Group and the Centre for Renewable Energy Systems and Technology (CREST) at Loughborough University are to take part in a collaborative programme involving the development of new solar cell technology based on thin film photovoltaics. The Technology Strategy Board is to invest over £0.5 million in the £1.53m research and development project, which is also supported by the Engineering and Physical Sciences Research Council (EPSRC).

The project will be co-ordinated by the lead partner, Ove Arup and Partners, who will also be responsible for building integration issues. Applied Multilayers will apply its patented Closed Field reactive sputtering technology to the deposition of thin film photovoltaic materials and work together with CREST to develop new thin film processes. Pilkingtons will develop and supply special TCO (Transparent Conducting Oxide) coated glass for the project and will also be involved in optical design.

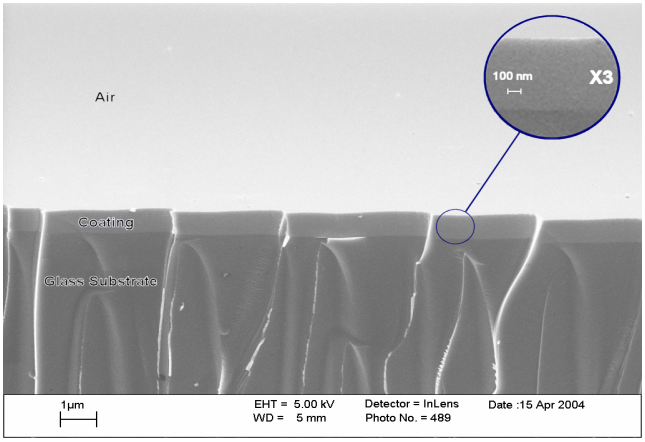

Figure 1. The CFM process produces dense films with low stress ideal for thin film PV. The morphology can be controlled using substrate bias or process gas pressure.

Closed Field reactive Magnetron (CFM) sputtering has a number of important advantages for the deposition of thin film photovoltaics:

- **The CFM process produces excellent quality ITO without heating or post annealing.**
- **The CFM process can be used to deposit silicon nitride or silicon oxy-nitride as an anti-reflecting encapsulation layer**
- **The low temperature process is ideal for both glass and polymer substrates.**
- **The process produces superior dense thin films with low stress.**
- **The process can be applied in "batch" or continuous "in-line" or "roll to roll" industrial scale processing**

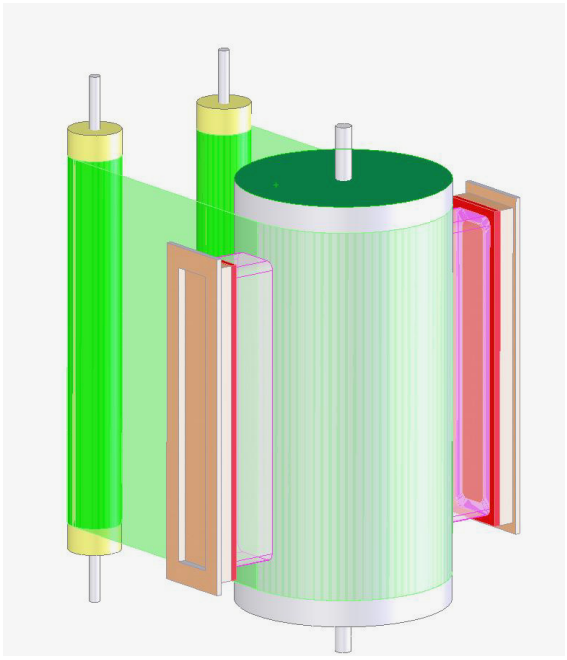

Figure 2 The CFM configuration can be adopted in In-line or Roll to Roll formats. The magnetrons facing the roller are of opposite magnetic polarity.

Applied Multilayers supplies a range of batch systems to suit applications and budgets. In addition, Applied Multilayers has agreed licenses to its patented technology for specific processes for in-line and roll to roll configurations.

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