For immediate release

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**Harnessing Solar Energy**

## PRAMAC Swiss SA, part of the PRAMAC multinational group, began producing thin film solar panels in July 2009. Their plant, based in Riazzino, is the largest solar panel production facility in Switzerland. It produces Micromorph® panels that use multi-layer thin film technology: active hydrogenated silicon layers (Si:H) and transparent conductive oxide (TCO) contact layers are deposited on a glass substrate by chemical vapour deposition. This layered technology increases absorption in the near-infrared and significantly increases efficiency.

## PRAMAC Swiss SA prides itself on quality and has an extensive QC department, headed by Dr. Nadia Galimberti. Raman spectroscopy was one of the first analytical techniques chosen by PRAMAC Swiss SA for use in both its production plant and its quality control (QC) laboratory, because of its well-accepted role in characterising micro-crystalline silicon. The QC laboratory also employs: ellipsometry, for layer thickness and optical constant measurements; transmittance spectrophotometry, for the determination of the TCO layer roughness or 'haze'; panel quantum efficiency measurers; sun simulators; weathering rooms for damp-heat tests; mechanical shear testers; and a light soaking bench for cell ageing.

Raman analyses in the QC laboratory are performed using an inVia Raman microscope, with 20 panels being withdrawn from production for test every 15 days, just after first deposition of the Si- Si thin layer. Each panel is then cut into 13 square samples, and the crystalline fraction of each sample is measured at three different points. This process has been semi-automated with Renishaw's WiRE software custom analysis package (CAP), allowing a range of standardised procedures to be developed, each one efficiently automating part of the QC operation. CAP’s user-friendly interface has also enabled efficient multi‑operator use.

For further information about inVia Raman microscopes visit [www.renishaw.com/raman](http://www.renishaw.com/raman).

**Ends**

For further information please contact:

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