MT8214 - Advanced Silicon Solar Cells

Course content
The course on Advanced Silicon Solar Cells is organized within the Research School at the Norwegian Research Centre for Solar Cell Technology (FME-SOL), and it will be given at NTNU, at the Department of Materials Science and Engineering. The course is divided in 5 modules: *(i) Repetition about the physics of solar cells, (ii) Silicon production: from quartz to solar grade, (iii) Solidification and sawing processes: from solar grade to wafers, (iv) Defects and characterization techniques, and (v) From wafers to solar cells.*

When:	February 7th-10th, March 7th-10th and April 11th-12th 2011 (weeks 6, 10 and 15)
Where:	Department of Materials Science and Engineering, NTNU, Alfred Getz vei 2B, Trondheim
Target group:	PhD students with background in materials science and/or physics
Credits:	7.5

Registration
NTNU-students should sign up through the regular, internal procedure. All external students (for example from UiO) should send an email to vebjorn.bakken@kjemi.uio.no no later than January 17th 2011 to register for the course. You will then receive further details regarding the necessary formalities.

Learning outcomes
The students are expected to understand fundamental principles of the physics of solar cells and solar cells manufacturing, as well important processes during the PV silicon value chain, e.g. metallurgical and solar grade silicon production, wafering and solar cell processes. Emphasis will be given to material- and electrical properties, as well as structural defects and characterization methods. During the course, practical sessions in the laboratory to detect defects and measure electrical properties will be given.

Exam
Written exam.

Course responsible
Ass. Prof. Marisa Di Sabatino, marisa.di.sabatino@material.ntnu.no

Recommended literature
M. A. Green: *Solar Cells: Operating Principles, Technology, and System Applications*
A. Luque and S. Hegedus (Eds.): *Handbook of Photovoltaic Science and Engineering*