



The Norwegian Research Centre  
for Solar Cell Technology



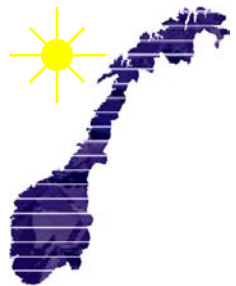
# Research Update

Erik Stensrud Marstein

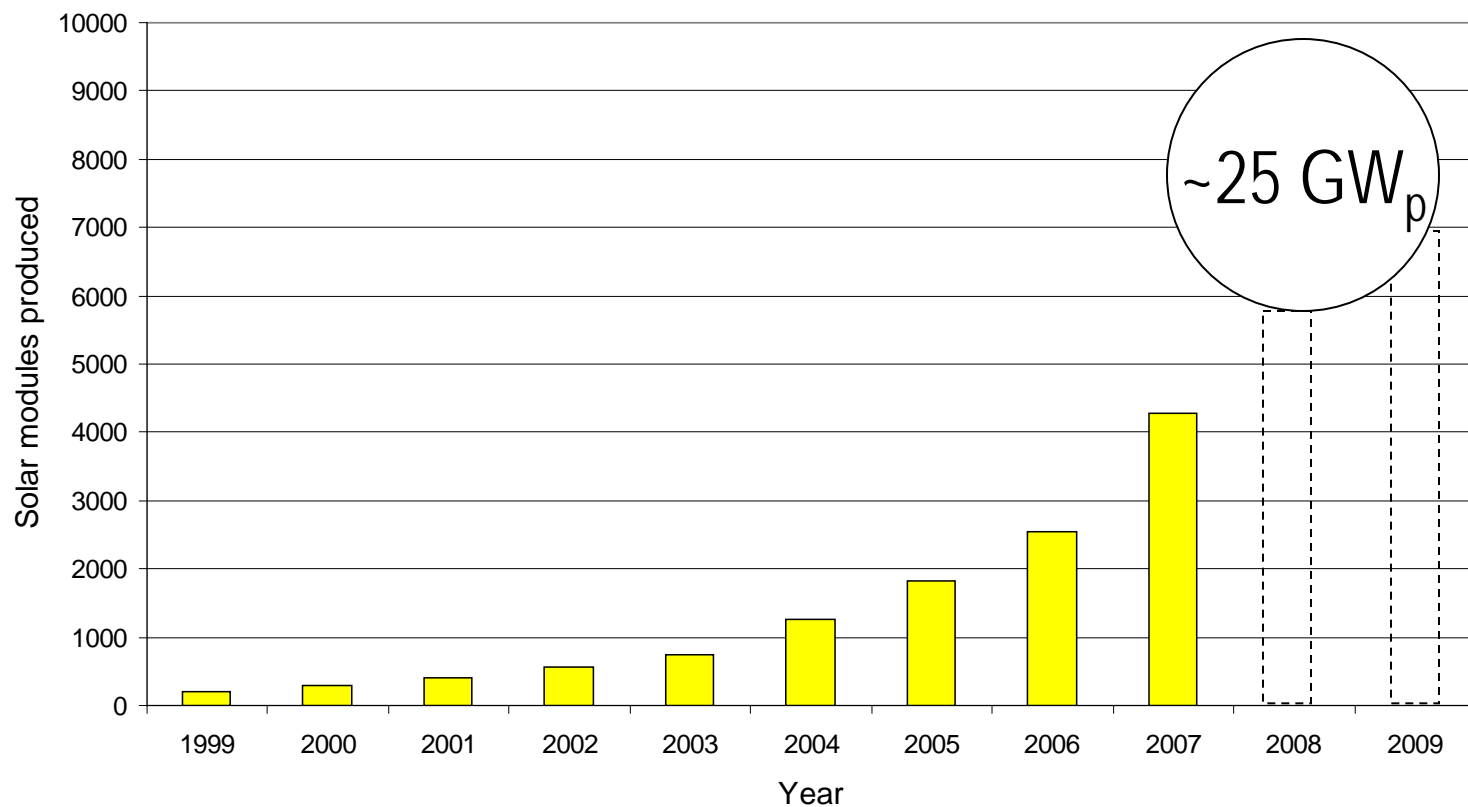
Renewable Energy Research Conference – Trondheim 2010

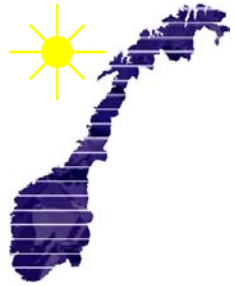






# Industrial growth



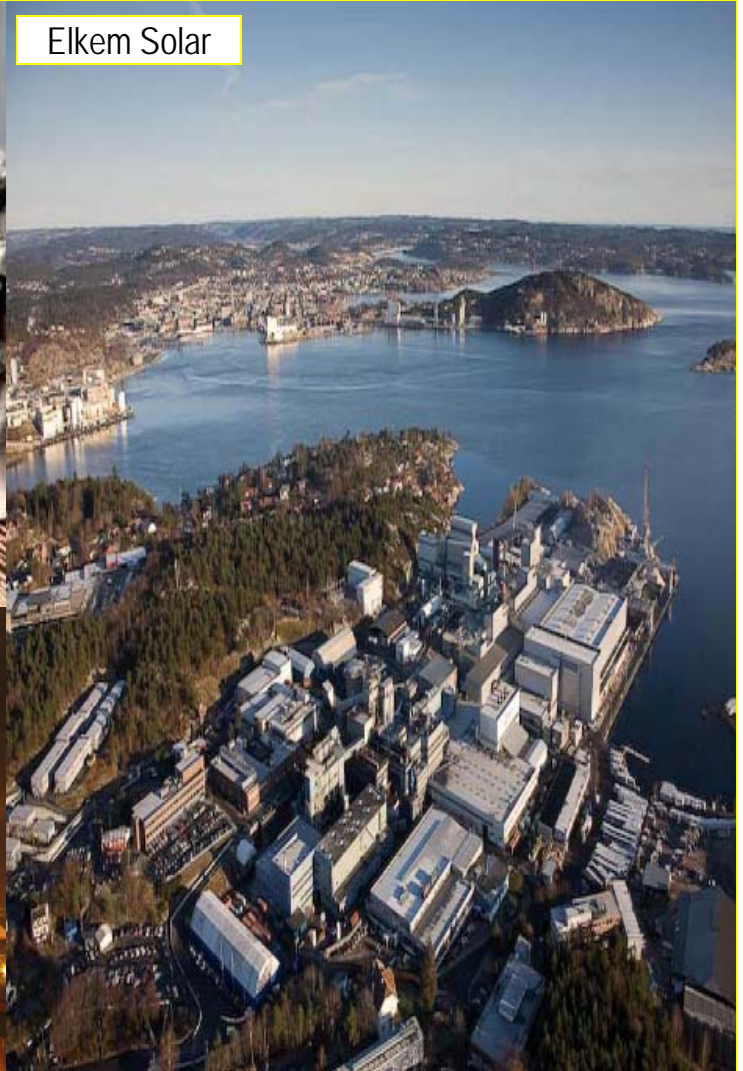


# Solar cells in Norway!

Vøringsfossen

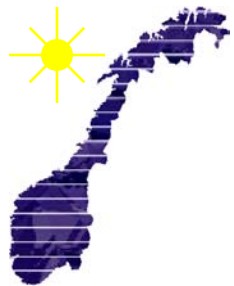


Elkem Solar



Årdal





# Solar United



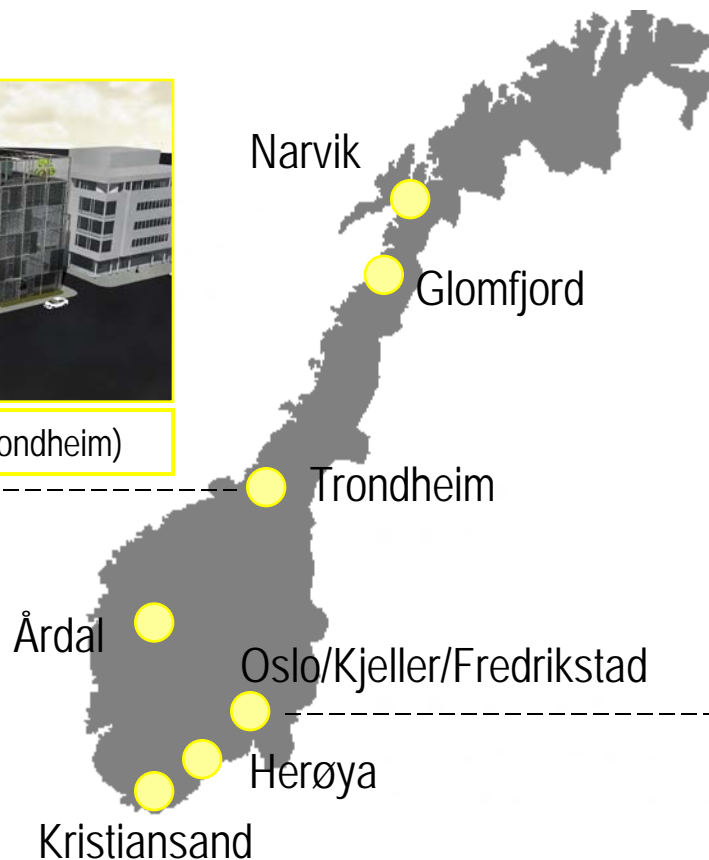
Solbygg (Trondheim)



MiNaLab (Oslo)



Solbygg (Kjeller)



Forskningspartnere: IFE, NTNU, SINTEF og UiO

Industripartnere: Elkem Solar, Fesil Sunergy, Hydro, Innotech Solar, Norsun, Prediktor, REC, Scatec og Umoe Solar

Tilknyttede miljøer: NORUT og UiA

IFE, NTNU, SINTEF, UiO



# Silicon-based solar cells

Silicon  
feedstock

Crystallization  
and wafering

Solar cells and  
modules

Solar energy  
systems

Elkem Solar  
Fesil Sunergy  
REC

Norsun  
REC

Innotech Solar  
REC

Scatec Solar  
Statkraft Solar

> 2500 employees in Norway!

## Underleverandørindustrien:

Artech, Crusin, Metallkraft, Prediktor, Saint Gobain,  
Tronrud Engineering, Vetro Solar, Washington Mills ...



# Research update

Silicon  
feedstock

Crystallization  
and wafering

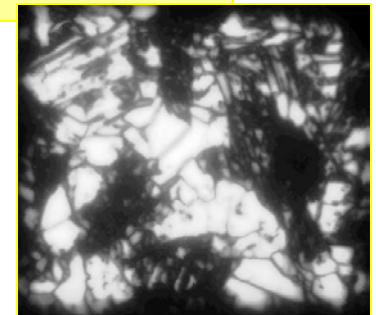
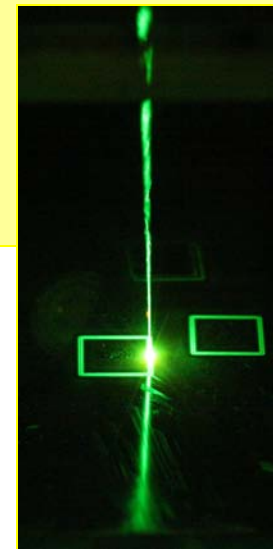
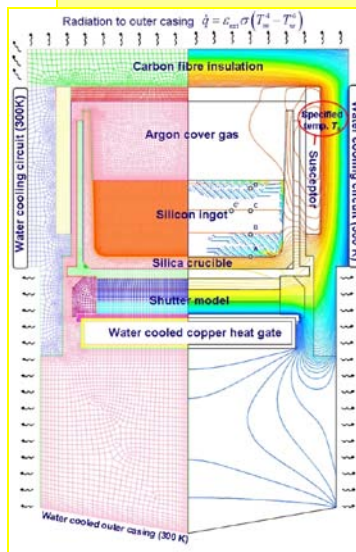
Solar cells and  
modules

Solar energy  
systems

Process  
modelling  
"SiSim"

Mono- and  
multicrystalline  
silicon

Solar cells  
and modules



New characterization methods and tools



# New materials

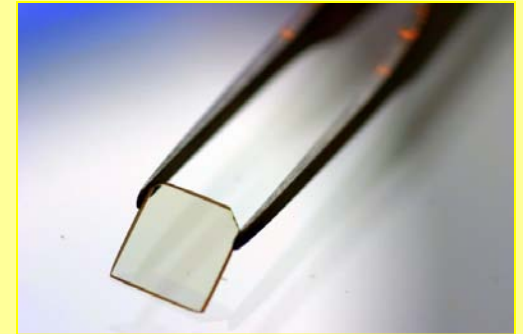
43 %?

~~42 %?~~

~~41.1 %~~



- New absorber materials
  - Intermediate band materials
  - Oxide-based tandem solar cells



- Light trapping
  - Photon energy conversion

- New materials for next generation silicon solar cells

