Progress Report

IEC TC82 WG7 Concentrator Modules

Convenor: **Robert McConnell**
bob@amonix.com

San Francisco, California
May 21, 2008
Modified by Sarah Kurtz for Solar ABCs Meeting,
June 3, 2008

IEC TC82 WG7 Members

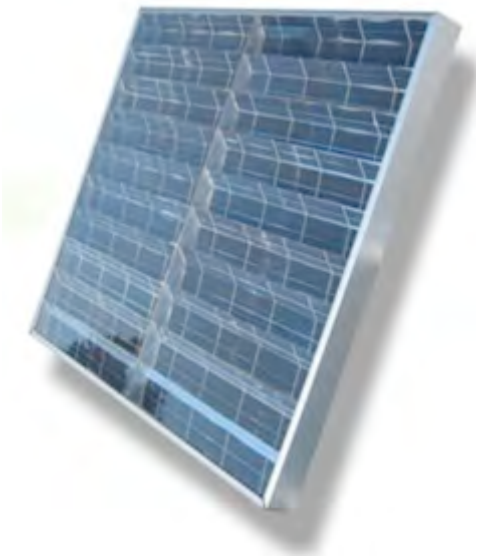
Robert McConnell Convenor

Helge Aamodt (Norway)
Ignacio Anton (Spain)
Kenji Araki (Japan)
Roger Bentley (UK)
Andreas Bett (Germany)
Vicente Diaz (Spain)
Liang Ji (US)
John Lasich (Australia)
Ignacio Luque (Spain)
Hans-Dieter Mohring
Leonid Rubin (Canada)
Gabriel Sala (Spain)
William Shisler (US)
Ebara Toshiyuki (Japan)
Se-Wang Yoon (Korea)
Expect several additions

Many Players in the Field

Reflective and Refractive Approaches

High and low concentration



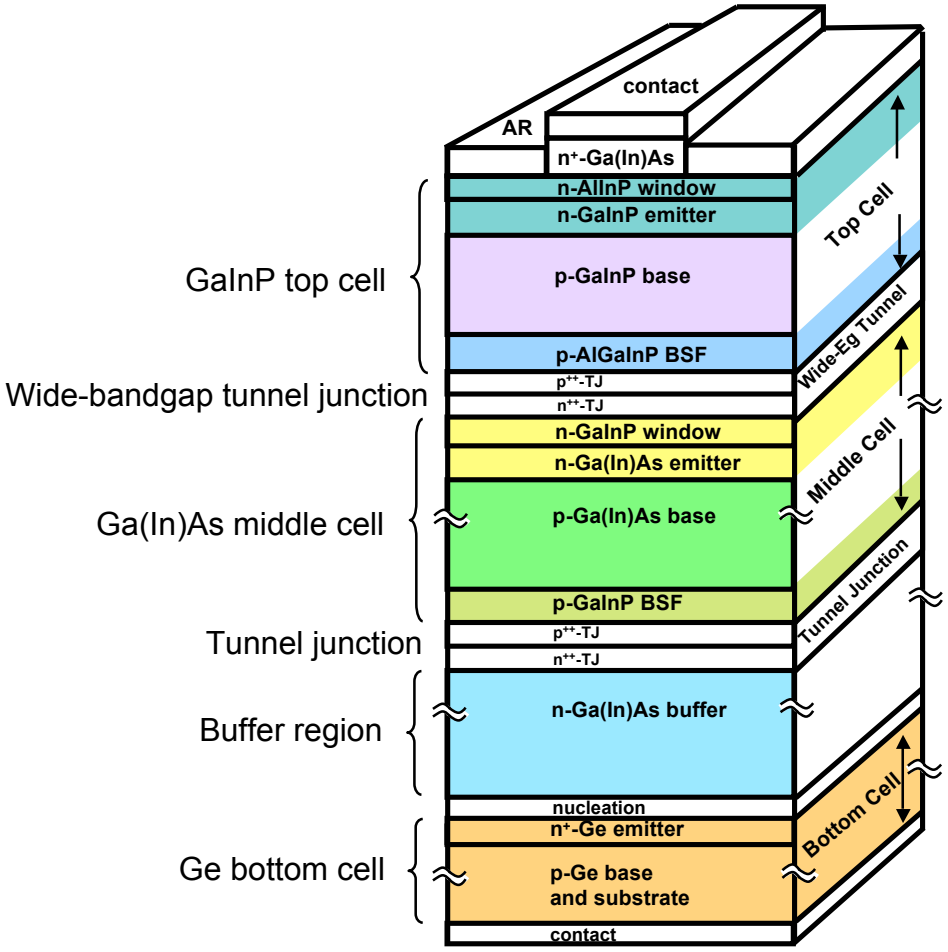
Spanish Installations of Amonix Technology

1 MW Aerial View

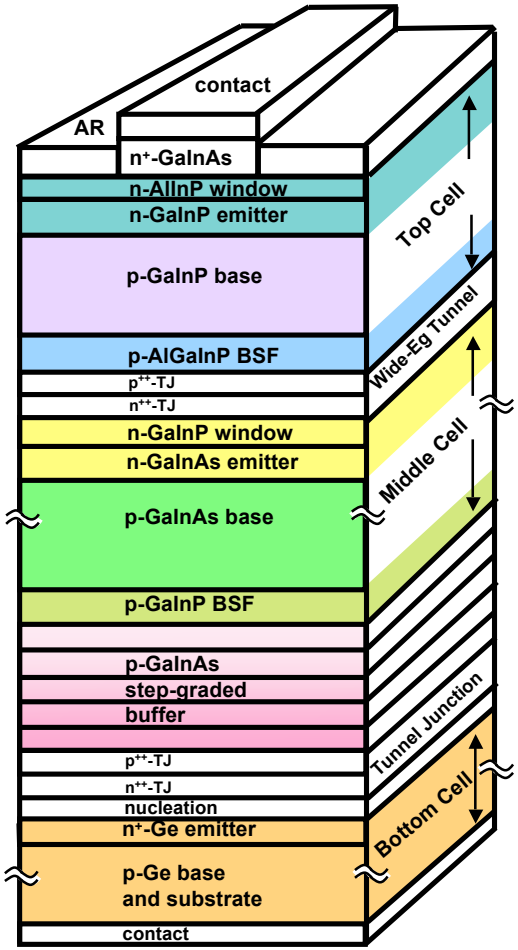
10 MW Installation

ISFOC (in Spain) is planning multiple installations for testing purposes

Spectrolab: State-of-the-Art 3J Cell



Lattice-Matched (LM)

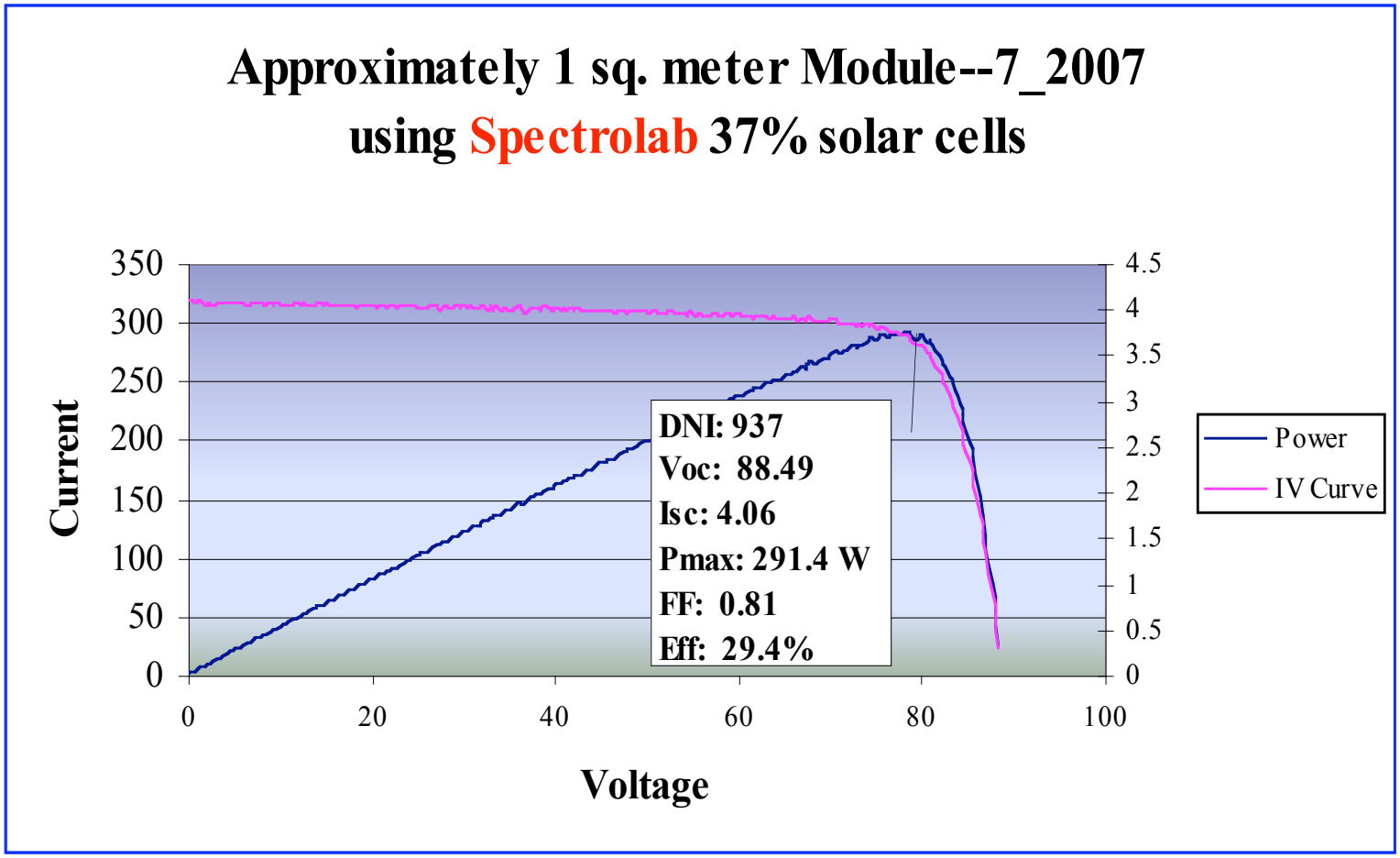


Lattice-Mismatched or Metamorphic (MM)

40.7 % champion efficiency

Latest MJ Module:

29.4% efficiency under field conditions



2007 WG7 meetings

- Madrid---3/2007: Final details on 62108
  - Forward bias can increase T unacceptably
  - Do we adequately test for high flux?
- Marburg—10/2007
  - Agreement on CPV "STC": effective 1/2008
    - Specify atmospheric conditions, 20 C air temp, wind 4 m/s, 850 W/m^2 D
  - For Module/CPV name plate rating
    - Add spectra: G 173 Direct
- Fukuoka—12/2007
  - Subgroup worked on performance rating

San Francisco Progress

- Work completed to submit NWPs and first working drafts of:
  - Power rating (-1)
  - Tracker
  - Safety
- Discussion on test measurement specs
- Discussion of reference spectrum (-2) and energy rating (-3) standards
- Short joint meetings with WG1 and WG3

Issues to work through

- Module or system level?
- Temperature (should we be consistent with other standards?)
  - Cell (flat-plate standard)
  - Ambient (PVUSA)
  - Heat sink?
- Low-X (continuum between 1 and 1000 suns)
- 850 vs 1000 W/sq m for DNI not as big of a controversy because the Germans don't see high DNI
- Need close collaboration with other working groups