


K2 Energy Limited

Investor Update

16 May 2011

Four Steps to Commercial Development

- **Four major steps in first phase of K2's development of a Mears MST-enabled Photovoltaic (PV) solar cell for commercial use.**

1) Computer simulation and modelling of the concept - SUCCESSFULLY COMPLETED

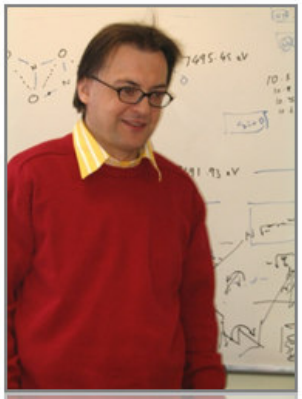
2) Optical characterisation to confirm the concept - SUCCESSFULLY COMPLETED

3) Testing of MST solar cells to extract key material parameters - IN PROCESS

4) Collaboration with selected solar cell manufacturers - manufacturing prototype and commercialisation

Proven Technical Management Team

- **Mr. Scott Kreps - Vice President, Engineering**
  - 20+ years semiconductor product development and manufacturing
  - Harris Semiconductor (now *Intersil*, NASDAQ: ISIL) and Applied Micro Circuits Corporation (NASDAQ: AMCC)
  - Successfully developed and brought leading edge silicon semiconductor products to market
  - Strong Foundry Management Experience
  - B.S.E.E., Purdue University



- **Dr. Marek Hytha – Chief Scientist**
  - 20+ years condensed matter physics and successful developer of numerous *ab initio* quantum mechanical techniques for the calculation of chemical and solid state properties in materials
  - Multiple academic and research positions around the world
  - Authored 25+ U.S. patents and over 40 scientific papers and conference presentations
  - MSc & Ph.D. Physics - Charles University, Prague

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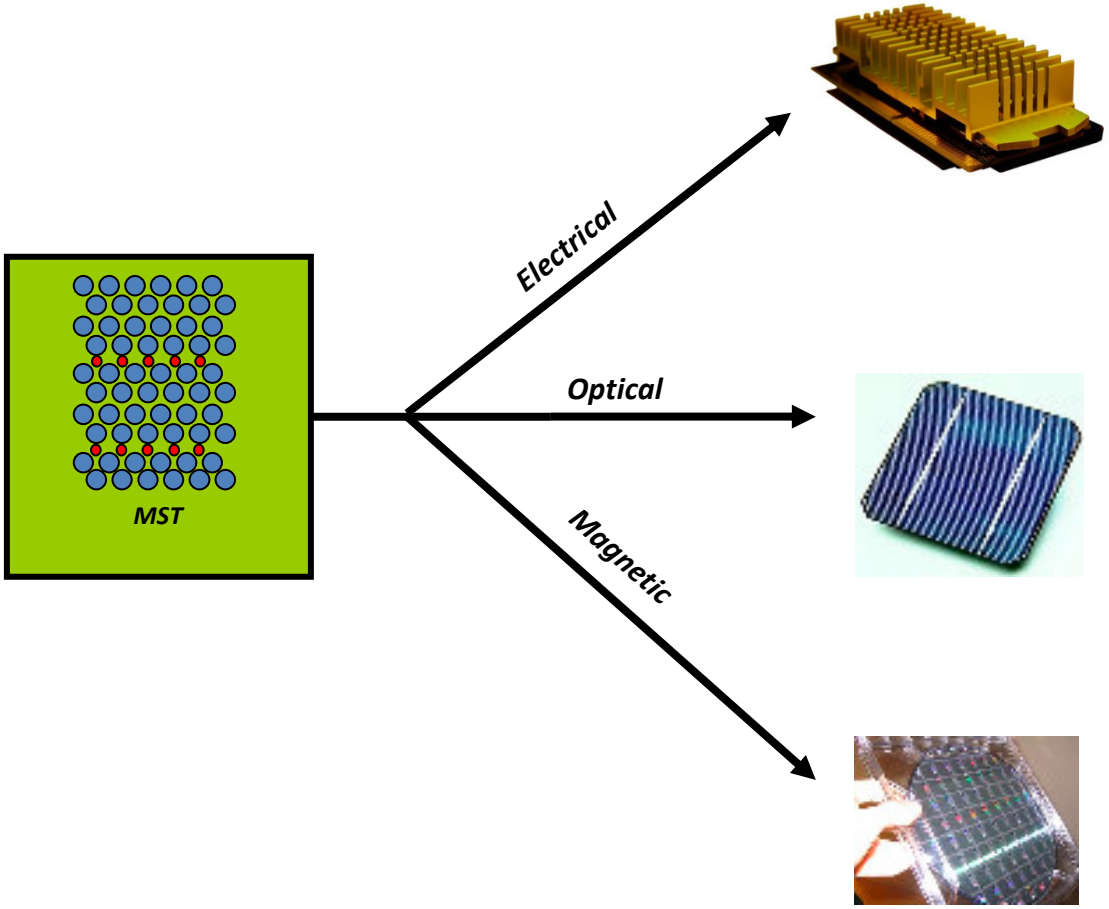
Computer Simulation: Step 1

- **Computer simulation and modelling indicated that the light absorption of silicon could be significantly enhanced.**



Solar Cells

- Much Higher Optical Absorption
- Higher Efficiency

$30B (~40% Growth)

Optical Characterisation – Step 2

- **To test and verify the simulation, various optical (and physical) tests were undertaken with the following results:**
  - Ellipsometry measurements indicate 5x – 50x increase in optical absorption demonstrated in MST film compared to c-Si
  - Previous work has demonstrated MST stability vs. typical heat treatment process steps
  - Higher absorption and other improved design features should allow for thinner, more efficient solar cells
  - Full optimisation also depends on electrical performance in device – will be done later

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Testing of MST Solar Cells – Step 3

- **The testing is to measure key material parameters that determine for example to what degree the increased light absorption of MST solar cells results in increased electrical current.**

- **Two lots of MST solar cells were fabricated for testing:**
  - CNS facility at Harvard
  - TEI solutions – a CMOS grade facility based at Tsukuba, Japan

- **The CNS cells have been tested as announced**

Testing of MST Solar Cells – Step 3

- **First–pass HCNS results indicated up to 60% increased power output compared to silicon cells *of a similar thickness*.**
- **For reasons already announced, the TEI wafers have been unavoidably delayed.**
- **To complete this phase of the program, we need to test and analyse the first TEI wafers which is expected within the next month.**
- **A further cycle of learning is expected before launching Step 4**

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Collaboration with Solar Cell Manufacturers – Step 4

- **Prior to the end of this calendar year, we intend to engage with one or more solar manufacturers, depending on the results achieved**

- **The expected program(s) will be to evaluate the MST technology using Partner manufacturing process(es) and to realize a MST-cell manufacturing prototype, based on:**

  - Standard c-Si cell geometry of 200/300 microns thickness

  - Ultrathin cell geometry