

Solar cells of the future

December 18 2007

A new material, nano flakes, may revolutionise the transformation of solar energy to electricity. If so, even ordinary households can benefit from solar electricity and save money in the future.

If researcher Martin Aagesen's future solar cells meet the expectations, both your economy and the environment will benefit from the research. Less than 1 per cent of the world's electricity comes from the sun because it is difficult to transform solar energy to electricity. But Martin Aagesen's discovery may be a huge step towards boosting the exploitation of solar energy.

"We believe that the nano flakes have the potential to convert up to 30 per cent of the solar energy into electricity and that is twice the amount that we convert today," says Martin Aagesen who is a PhD from the Nano-Science Center and the Niels Bohr Institute at University of Copenhagen. During his work on his PhD thesis, Martin found a new and untried material.

"I discovered a perfect crystalline structure. That is a very rare sight. While being a perfect crystalline structure we could see that it also absorbed all light. It could become the perfect solar cell," says Martin. The discovery of the new material has sparked a lot of attention internationally and has led to an article in *Nature Nanotechnology*.

"The potential is unmistakeable. We can reduce the solar cell production costs because we use less of the expensive semiconducting silicium in the process due to the use of nanotechnology. At the same time, the



future solar cells will exploit the solar energy better as the distance of energy transportation in the solar cell will be shorter and thus lessen the loss of energy," says Martin Aagesen who is also director of the company SunFlake Inc. that pursues development of the new solar cell.

Source: University of Copenhagen

Citation: Solar cells of the future (2007, December 18) retrieved 27 April 2024 from <u>https://phys.org/news/2007-12-solar-cells-future.html</u>

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