



Lack of lighting

A major problem in poverty – nanotechnology has the solution.

A lack of electrical power and lighting is a very major problem in large parts of the world. Many millions of people worldwide live in the dark as soon as the sun sets. Not being able to work or study because of darkness makes it impossible for people to break out of the poverty spiral.

Light is a central need for humans and a major health factor. Lighting promotes health and well-being and also increases productivity.

An important step in combating poverty is therefore to develop the smart, energy saving LED lamps and provide them with energy in an electrical power system based on solar cells.

This would enable many poor people to take steps towards a more dignified life, to become self-sufficient in their electricity needs while contributing to societal development with renewable energy.

Lighting is also a very interesting research field for other reasons.

Within around ten years, advanced lighting will probably be used to alleviate sleep disorders, reduce falls and improve the results of school pupils. Research shows that the right lighting makes us perform better and boosts our well-being.

Adapted lighting is already used to a limited extent today. But the current LED bulbs almost all emit blue light, which limits the possibilities of achieving the desired outcomes.

With “true colour” light-emitting diodes – which also emit red and green and not only blue – the possibilities increase.

The lighting can then for example be connected to a computer and sensor which is adjusted as the daylight changes according to pre-programmed wishes.

In order to really achieve the desired dynamic light, which is known in professional circles as Human Centric Lighting, the light diodes thus need to be constructed differently.

With nanowires as a starting-point, the Lund researchers have found a way to do this.

Nanolab Science Village will be an important asset in the researchers’ opportunities to move forward on the development of nanotechnology to improve the function of LED lighting.

Imagine this being possible thanks to you!

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