

## Flow Synthesis of Silver Nanowires for Semitransparent Solar Cell Electrodes: A Life Cycle Perspective - DTU Orbit (08/11/2017)

### Flow Synthesis of Silver Nanowires for Semitransparent Solar Cell Electrodes: A Life Cycle Perspective

Silver nanowires (AgNWs) were prepared on a 5g scale using either the well-known batch synthesis following the polyol method or a new flow synthesis method. The AgNWs were employed as semitransparent electrode materials in organic photovoltaics and compared to traditional printed silver electrodes based on micron sized silver flakes using life cycle analysis and environmental impact analysis methods. The life cycle analysis of AgNWs confirms that they provide an avenue to low-impact semitransparent electrodes. We find that the benefit of AgNWs in terms of embodied energy is less pronounced than generally assumed but that the toxicological and environmental benefits are significant.

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