

Notice of dissertation defense

5.3.2018

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Title	Affordable Light-Trapping Metamaterials for Thin-Film Photovoltaic Cells
Content	<p>Metamaterials (MMs) are artificial media with extreme electromagnetic properties not achievable in natural media and advantageous for applications. Most part of MMs are performed of resonant constituents and our original research starts namely from a resonant MM.</p> <p>The most important part of this thesis is targeted to a-Si TFSCs. These potentially high-efficiency flexible TFSCs required of us very broadband, easily feasible and cheap design solutions. We have found these solutions introducing two types of non-resonant light-trapping MMs. These novel design solutions are theoretically and experimentally studied in this thesis.</p> <p>Their fabrication refers to cheapest types of known micro- and nanotechnologies. Meanwhile, we have shown the unprecedented enhancement of the useful optical absorption granted by such LTSs to a-Si TFSCs with nearly optimal thicknesses of the PV layer (400-500 nm).</p>
Field of research	Electrical Engineering
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Date and time	16.03.2018 at 12:00
Place	Aalto University School of Electrical Engineering. Hall TU2, Maarintie 8, 02150, Espoo, FI
Opponent	Professor Andrei Lavrinenko, Technical University of Denmark (DTU), Denmark
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