USING INVERSE ANALYSIS TO FIND OPTIMUM NANO-SCALE RADIATIVE SURFACE PATTERNS TO ENHANCE SOLAR CELL PERFORMANCE

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SUMMARY. Nano-scale surface patterning can provide highly spectral-directional absorption properties. In this paper, FDTD simulations of Maxwell's equations characterize near-field radiation-surface interactions. An optimization program then determines an optimum geometry for the solar cell surface patterning. Optimization techniques include the Quasi Newton (QN) method, Simulated Annealing (SA) and Tabu Search (TS).