Abstract Submitted
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Towards solar cells combining silicon nanopilars and various semiconductor nanoparticles[1] D. STIEVENARD, CNRS, Y. LAMBERT, ISEN, DI ZHOU, Univ de Lille, T. XU, ISEN, B. GRANDIDIER, N. RAMESH PRATIBHA, F. GOURBILLEAU, CNRS, S. TURRELL, C. KINOWSKI, O. ROBBE, Univ de Lille, G. PAN, R. BOUKHERROUB, CNRS, W. CHEN, R. LARDE, P. PAREIGE, Univ de Rouen, J. HABINSHUTTI, Univ de Lille, IEMN TEAM, CIMAP TEAM, LASIR TEAM, IRI TEAM, GPM TEAM — We have developped solar cells combining silicon nanopilars and various semiconductor nanoparticles-NPs- (silicon or CdSe ones obtained by chemical synthesis or silicon ones obtained by thermal annealing of multilayer structure Si-SiO(2)/SiN(x) fabricated by reactive magnetron sputtering.). Nanopilars are obtained by standard RIE process using silica spheres as active mask for the etching. NPs are chemically grafted or deposited by Langmuir Blodgett technique on the p-type pillars and therefore covered by a thin polysilicon n type layer. The doping level and of the different interfaces are monitoring by 3D Atom Probe Tomography. Photocurrents curve without and with NPs will be presented, evidencing the NPs active role.

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