An LC filter is used to filter out the dc components in the inverter output voltage. Fig. 7(c) shows a pure sine wave with amplitude of around 325V produced at the output side of the LC filter. The RMS voltage obtained is 229.4V at the grid side as shown in Fig. 7 (d).

6 Conclusion

An improved Artificial Bee Colony algorithm named as ABC-PO for tracking true maximum power point of a solar panel under partial shading condition is proposed in this paper for grid connected application. The main advantage of this algorithm is elimination of the convergence at local maximum power point during partial shading condition. In the proposed ABC-PO MPPT method, the conventional Perturb and Observe (P&O) MPPT and swarm intelligence based MPPT Artificial Bee Colony (ABC) is combined together to get the advantages of both algorithms. To validate the effectiveness of the ABC-PO algorithm three different shading conditions are simulated in MATLAB/SIMULINK. In all the three conditions boost converter and inverter outputs are also obtained with the designed values. Also the RMS voltage of 230V is obtained at the grid side for all the PSCs.

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