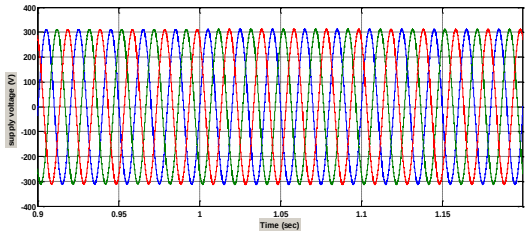

Fig. 11 Supply voltage

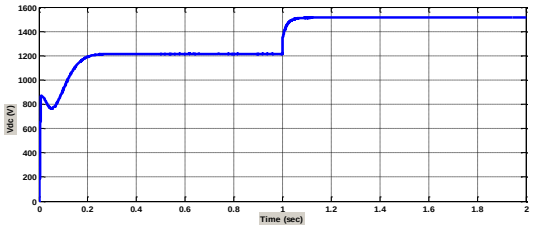

Fig. 12 DC-link voltage

TABLE I : SYSTEM PARAMETERS

VI. REFERENCES

[1]Yun.SY, John.R and Bing.JH(2012) "Water Soluble Polymers as Proton Exchange Membranes for Fuel Cells"Polymers review, Volume 4,pp. 913-963.

[2] Sid A.A. ; Kamal M ; Abderrezzak C ; Bruno F"Multilevel Inverter Topology for Renewable Energy Grid Integration" IEEE Transactions on Industrial Electronics ,28 December 2016. doi: 10.1109/TIE.2016.2645887.

[3]Dallia A ; Daniel D. Aklil-D "Modeling a Proton Exchange Membrane (PEM) Fuel Cell System as a Hybrid Power Supply for Standalone Applications"Power and Energy Engineering Conference (APPEEC), 2011 Asia-Pacific, 25-28 March 2011, doi: 10.1109/APPEEC.2011.5749114.

[4]Khaled.M and Chaker.A (2009)"FUZZY LOGIC CONTROL OF FUEL CELL SYSTEM FOR RESIDENTIAL POWER GENERATION "Journal of ELECTRICAL ENGINEERING, VOL. 60, NO. 6,pp. 328–334.

[5]Younane N ; Hani H,"Modelling and Parameter Observation for Proton Exchange Membrane Fuel Cell" International Conference on Developments of E-Systems Engineering (DeSE), 13-14 Dec. 2015, **doi:** 10.1109/DeSE.2015.46.

[6]Yuri R. R ; Maíra R. M ; Juliana R. M ; Paulo F. R ; Fernando N. B ; A. C. Zambroni "Impact of non-linear loads and renewable generation on a university research building" 17th International Conference on Harmonics and Quality of Power (ICHQP), 16-19 Oct. 2016, doi: 10.1109/ICHQP.2016.7783438.

[7]Izhar. M, Hadzer. CM, Syafrudin .M, Taib. S, and Idris. S,(2004)"Performance for passive and active power filter in reducing harmonics in the distribution system,". Power and Energy Conference, PECon. Proceedings. National, pp104-108.

[8]Jeong.GY, Park. TJ and Kwon. BH, (2000)"Line-voltage sensorless active power filter for reactive power compensation," Electric Power Applications, IEE Proceedings-, vol. 147,pp. 385-390.

[9]Lucian A, Frede B, Steffan H, Paul T(2008) Adaptive Compensation of Reactive Power with Shunt Active Power Filters" Published in: IEEE Transactions on Industry Applications (Volume: 44, Issue: 3, 16 May 2008) ,pp. 867 – 877. doi: 10.1109/TIA.2008.921366.

[10]Suresh.D, Jaiganesh.K, Duraiswamy.K (2013) " AC-AC MULTILEVEL CONVERTER BASED WIND ENERGY SYSTEM"International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering, Vol. 2, Issue 5, pp. 1686-1673.

[11]Khaled.M and Chaker.A (2013) "A Central Composite Face-Centered Design for Parameters Estimation of PEM Fuel Cell Electrochemical Model" Leonardo Journal of Sciences, Issue 23, pp. 84-96.

[12]Samosir.AS, Sutikno.T, Yatim.AHM (2011) "Dynamic Evolution Control for Fuel Cell DC-DC Converter '' TELKOMNIKA, Vol.9, No.1, pp.183-190.

[13]Berbaoui.B, Dib.S, Dehini.R (2014)"Grid-connected Photovoltaic Power Systems and Power Quality Improvement Based on Active Power Filter "TELKOMNIKA Indonesian Journal of Electrical Engineering Vol. 12, No. 8, pp.5861 – 5868.

[14]João L. Afonso, , M. J. Sepúlveda Freitas, and Júlio S. Martins" p-q Theory Power Components Calculations",ISIE'2003 - IEEE International Symposium on Industrial Electronics,Rio de Janeiro, Brasil, 9-11 Junho de 2003, ISBN: 0-7803-7912-8.