DAFTAR PUSTAKA

Biansoongnern, S., & Plungklang, B. (2016). Non-Intrusive Appliances Load Monitoring (NILM) For Energy Conservation In Household With Low Sampling Rate," *Procedia Computer Science,* 86, 172-175.

Chang, H., -H., Yang, H.,-T., & Lin, C.,-L. (2007). Load Identification In Neural Networks for A Non-Intrusive Monitoring Of Industrial Electrical Loads. *International Conference on Computer Supported Cooperative Work in Design*, 664-674

Hart, G.W. (1992). Nonintrusive Appliance Load Monitoring. *Proceedings IEEE*, 80, 12

Hutoro, K. (2015). *Design of Smart Meters to Monitor and Identify the Use of Electrical Energy in the Household Sector Using Backpropagation Neural Networks*, Surabaya.

Kim, J., Le, T.,-T.,-H., & Kim, H. (2017). Nonintrusive Load Monitoring Based On Advanced Deep Learning and Novel Signature. *Computational intelligence and neuroscience,* 2017

Kumar, D., S., Low, K., L., Sharma, A., & Woo, W., L. (2019). Non-Intrusive Load Monitoring using Feed Forward Neural Network. *IEEE Innovative Smart Grid Technologies - Asia (ISGT Asia)*, 4065-4069,

Laughman, C., Lee, K., Cox, R., Shaw, S., Leeb, S., B., Norford, L., & Armstrong, P. (2003). Power Signatur Analysis. *IEEE Power & Energy Magazine*.

Lesnussa, Y., A., Mustamu, C., Lembang, F., K., & Talakua. (2018). Application Of Backpropagation Neural Networks In Predicting Rainfall Data In Ambon City. *International Journal of Artificial Intelligence Research,* 2, 41-50.

Li, Y., Yin, B., Wang, P., & Zhang, R (2019). Non-intrusive Load Monitoring Based on Convolutional Neural Network Mixed Residual Unit. *Journal of Physics: Conference Series,* 1176, 022052.

Lin, H.Y., & Tsai, M.S. (2011). Application Of Hierarchical Support Vector Machines For Identifying Load Operation In Nonintrusive Load Monitoring Systems. *Proceeding of World Congress On Intelligent Control And Automation.*

Liu, Y., Wang, X., & You, W. (2018). Non-Intrusive Load Monitoring by Voltage–Current Trajectory Enabled Transfer Learning. *IEEE Transactions on Smart Grid,* 10, 5609-5619.

Roos, J. G., Lane, E. C., & Hanche, G. P. (1994). Using Neural Networks For Non-Intrusive Monitoring of Industrial Electrical Loads. *Presented at the Proceedings of IEEE Instrumentation and Measurement Technology Conference.*

Silva, I., Spatti, D. H., Flauzio, R. A., Liboni, L. H. B., & Alves, S. F. R. (2017). Artificial Neural Networks. *Springer Nature.*

Sudoso, A., M., & Piccialli, V. (2019). Non-Intrusive Load Monitoring with an Attention-based Deep Neural Network. *arXiv preprint arXiv:1912, 00759.*

Yunus, M., Y., Marhatang, M., Pangkung, A., & Djalal, M., R. (2019). Design Of A-Based Smart Meters To Monitor Electricity Usage In The Household Sector Using Hybrid Particle Swarm Optimization-Neural Network. *International Journal of Artificial Intelligence Research,* 3.

Yunus, M., Y., Marhatang, M., Pangkung, A., & Djalal, M., R. (2018). NILM Based Smart Meter Design To Monitor Electrical Energy Use In The Household Sector Using Neural Network. *Seminar Nasional Hasil Penelitian (SNP2M PNUP).*

Zhang, J., Chen, X., Ng, W., W., Lai, C., S., & Lai, L., L. (2019). New Appliance Detection For Nonintrusive Load Monitoring. *IEEE Transactions on Industrial Informatics,* 15, 4819-4829.

Zoha, A., Gluhak, A., Imran, M., A., & Rajasegarar, S. (2012). Non-Intrusive Load Monitoring Approaches For Disaggregated Energy Sensing: A survey. *Sensors,* 12, 16838-16866.

LAMPIRAN

Listing program Arduino

```
#include <SoftwareSerial.h>
#include <PZEM004T.h>

PZEM004T pzem(10,11);  // (RX,TX) connect to TX,RX of PZEM
IPAddress ip(192,168,1,1);
void setup() {
  Serial.begin(9600);
  pzem.setAddress(ip);
}
void loop() {
//   float v = pzem.voltage(ip);
//   if (v < 0.0) v = 0.0;
//   Serial.print(v);
//   Serial.print("V; ");
  float i = pzem.current(ip);
  if(i >= 0.0){ Serial.print(i); }
//   float p = pzem.power(ip);
//   if(p >= 0.0){ Serial.print(p);Serial.print("W; "); }
//   float e = pzem.energy(ip);
//   if(e >= 0.0){ Serial.print(e);Serial.print("Wh; "); }
  Serial.println();
  delay(1000);
}
```

Gambar sistem secara keseluruhan

Kondisi kondisi hasil pengujian pada tampilan simulink