

2016, pag. 311-325

# Transmission of Three Resistance Sensor Signals Over Four Wire Line with Losses

Penin A., Sidorenko A.

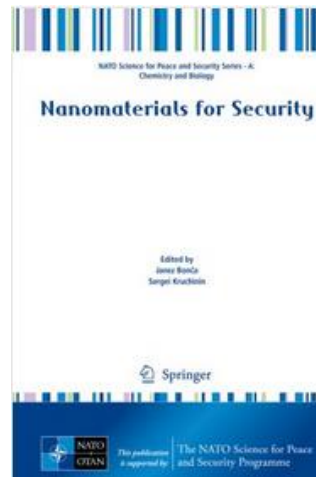
[https://doi.org/10.1007/978-94-017-7593-9\\_25](https://doi.org/10.1007/978-94-017-7593-9_25)

## Abstract

The invariant relationship between the sets of load conductivity values at the output of the balanced four wire communication line with losses and the corresponding current values at the input of this line is shown. This relationship does not depend on accuracy of measuring devices. It allows transmitting three signals over this communication line.

## References

1. Walker K, Ramplin M (2002) US Patent 6, 459, 363B1, 1 Oct 2002
2. Aldereguia A, Richter G, Williams J (2009) US Patent 7, 502, 991 B2, 10 Mar 200
3. Ovchinnikov V (2013) US Patent 8, 446, 977B2, 21 May 2013
4. Penin A (2015) Analysis of electrical circuits with variable load regime parameters: projective geometry method. Springer, Cham
5. Penin A, Sidorenko A (2015) Transmission of measuring signals and power supply of remote sensor. In: Bonca J, Kruchinin S (eds) Nanotechnology in the security systems. NATO science for peace and security series C: environment security. Springer, Dordrecht, pp 267–281



**2016, pag. 311-325**

6. Penin A (2012) Invariant properties of cascaded six-pole networks. *Int J Circuits Syst Signal Process* 6 (5), 305–312
7. Penin A, Sidorenko A (2016) Transmission of resistance sensor signals over multi-wire line with losses. In: 3rd international conference on nanotechnologies and biomedical engineering. Springer, Singapore, pp 332–335
8. Penin A, Sidorenko A, Donu S (2015) MD patent application S20150082