References

1. Li Z, Pan R, Wang J, Wang Z, Li B, Gao W. Real-time Segmentation of Yarn Images Based on an FCM Algorithm and Intensity Gradient Analysis. *Fibres & Textiles in Eastern Europe* 2016; 24, 4(118): 45-50. DOI:10.5604/12303666.1201130

2. Nateri A S, Ebrahimi F, Sadeghzade N. Evaluation of yarn defects by image processing technique. Optik 2014; 125: 5998-6002.

3. Wang C, Li J, Chen M, He Z, Zuo, B. The obtainment and recognition of raw silk defects based on machine vision and image analysis. *Journal of the Textile Institute* 2015 ;107: 316-326.

4. Carvalho V H, Cardoso P J, Vasconcelos R M, Soares F O. Optical yarn hairiness measurement system. *International Conference on Industrial Informatics* 2007; 1:359-364.

5. Ling, C, Zhao L, Li C, Zhou X. Digital image processing of cotton yarn seriplane. *International Conference on Computer and Information Application* 2010; 1: 274-277.

6. Qin W. On-line yarn evenness detection using CCD image sensor. *Control and Decision Conference* 2011; 1787-1790.

7. Ji J, Liu J, Gao W, Pan R, Liu J. Measurement of yarn linear density based on digital image processing, *Journal of Textile Research* 2011; 32(10):42-46.

8. Fei W, Zheng Y, Li W, Lu X. Analysis on Photoelectric Method of Measuring the Fineness of Raw Silk. *Advanced Materials Research* 2011;175-176:565-569.

9. MVTec Software GmbH. HALCON-the Power of Machine Vision.Germany:München 2007;1-103.

10. Carvalho V, Belsley M, Vasconcelos R M, Soares F O. Yarn hairiness and diameter characterization using a CMOS line array. *Measurement* 2008;41(10): 1077-1092.

11. Carvalho V, Cardoso P, Belsley M, Vasconcelos R M, Soares F O. Yarn hairiness parameterization using a coherent signal processing technique. *Sensors & Actuators A Physical* 2008; 142(1): 217-224.

12.Carvalho V, Cardoso P, Belsley M, Vasconcelos R M, Soares F O. Yarn diameter characterization using two orthogonal directions. *IEEE Transactions on Instrumentation & Measurement* 2009; 58(3): 594-601.