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 Author: [ADVANCED](#) | Volume Page
 Keyword: |

[TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

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[\[PDF \(1847K\)\]](#) [\[References\]](#)
Measurement of Textile Structure and Defect Using Laser Speckle
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Abstract: The fabric inspection is indispensable for evaluating the quality of textiles. However it has been performed by the visual evaluation. The visual inspection is a burden to the operator, and it is also difficult to evaluate qualitatively and quantitatively. Automation and labor saving are desired to improve uniformity and quality. Therefore, in this paper we examined the possibility of the fabric inspection system, which is based on analyzing the autocorrelation function obtained from the speckle pattern of textiles. And the possibility of the quantitative measurement of weave, yarn density, defect, and yarn count was obtained by analyzing the autocorrelation function obtained from the speckle pattern of the textile surface.

Key Words: [Fabric inspection](#), [Speckle pattern](#), [Autocorrelation function](#)
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