

Continuous Ink-jet Printing Systems: A Novel Model to Print Expiration Date Labels on Cylindrical Surfaces

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Abstract

Continuous ink-jet printing systems are commonly used to print expiration date labels for food products. These systems are designed to print on planar surfaces, however, a lot of food products package have a cylindrical shape (e.g. bottled and canned products) which causes an enlargement in characters of the far left-right label. In this work, a new model to correct this effect taking into consideration a cylindrical printing surface is presented. This model assumes the dynamic of an electrical charged ink drop as a solid particle which is affected by a drag force proportional to the square of its velocity and other forces due to electrical and gravitational fields. Numerical results show the correction of the enlargement mentioned above. In addition, the equations to minimize the printing's inclination caused by the method of operation in the continuous ink-jet systems are presented in this work.

References

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