

Title (en)

Method of operating an ink jet to achieve high print quality and high print rate.

Title (de)

Verfahren zum Betrieb eines Farbstrahls zum Erreichen einer hohen Druckqualität und einer hohen Druckrate.

Title (fr)

Méthode de commande d'un jet d'encre pour réaliser une haute qualité d'impression et un haut débit d'impression.

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Application

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Priority

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Abstract (en)

A drop-on-demand ink jet print head has an ink chamber coupled to a source of ink, and an ink drop orifice with an outlet. An acoustic driver produces a pressure wave in the ink and causes the ink to pass outwardly through the ink drop orifice and outlet. The driver is driven with bipolar drive pulses having a refill pulse component and an eject pulse component of a polarity which is opposite to the refill pulse component. The refill and eject pulse components are separated by a wait period. The drive pulses may be adjusted to minimize their energy content at a frequency corresponding to the dominant acoustic resonance frequency of the ink jet print head. This will accelerate drop breakoff, optimize drop shape and minimize drop speed variations over the range of drop printing rates. The size of the ink drops may be varied, such as by driving the acoustic driver with varying drive signals, preferably utilizing individual or combinations of a plurality of bipolar drive pulses. The ink jet printer of the present invention may be used to print with a wide variety of inks, including phase change (hot melt) inks to achieve high print quality at high print rates.

<IMAGE>

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Cited by

CN102145581A; EP0816081A3; EP1695826A3; US5592203A; US5802687A; US5933168A; EP0787589A3; US6161912A; US5714078A; US5825382A; US6957884B2; EP1176014A1; CN107443917A; US6106092A; EP2255968A1; US6155671A; DE4403042A1; EP0845357A3; US6193343B1; US6672700B2; US10232632B2; US10336088B2

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