

Title (en)

METHOD AND APPARATUS FOR ACCURATE CONTROL OF TEMPERATURE PULSES IN PRINTING HEADS

Title (de)

VERFAHREN UND APPARAT FÜR DIE GENAUE REGELUNG DER TEMPERATURPULSE IN DRUCKKÖPFEN

Title (fr)

PROCEDE ET DISPOSITIF DE COMMANDE PRECISE DE TEMPERATURE DANS DES TETES D'IMPRESSION

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Application

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Abstract (en)

[origin: WO9632273A1] A method and apparatus for producing a thermal pulse for a drop on demand printer actuator. A varying voltage pulse is applied to a resistance heater forming part of the actuator, which generates time varying power in the resistance heater. The power varies with respect to time in a manner comprising: a pre-heating stage, which raises the temperature of the actuator, but is of insufficient total energy to actuate the printing actuator; a stage of increased power which rapidly raises the temperature of the actuator to the required temperature for operation; a stage of decreased power, which is less than the power in stage (b) but is sufficient to maintain the required temperature for operation; a stage of low or zero power, during which the temperature rapidly falls below the required temperature for operation. Accurate control over the temperature history at critical points in a device (such as the nozzle tip in a thermal, drop on demand print head) can be achieved by determining the required power function by applying an initial power function to a dynamic finite element simulation of the required structure, and iteratively refining the power function.

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