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Dependence of Xerographical Developability on Ferrite Carrier Properties

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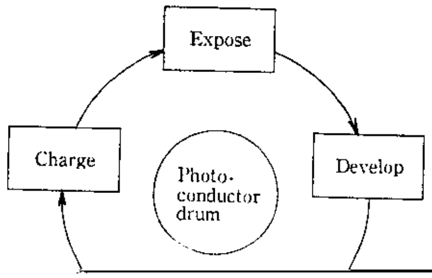
Synopsis :

The dependence of xerographical developability on ca.5 (e)1(C[64( )Tj EM3R8T(y)5.9 (9853)1(C[646[008.8
replaced by a ferrite carrier as a xerographic developer, but the developability of the latter has not yet been clarified. Measurements of image density, print contrast and the residual to ner mass have been made to elucidate the relationship between characteristics of the ferrite carrier and its developability. The image density increases,

Dependence of Xerographical Developability


Expose
Charge
Develop
Photo-
conductor
drum

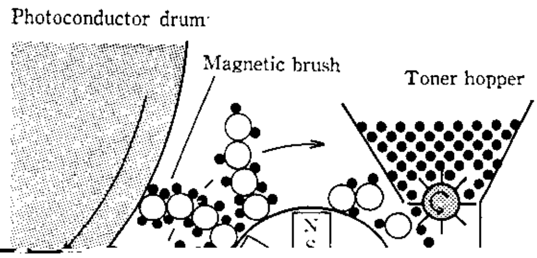
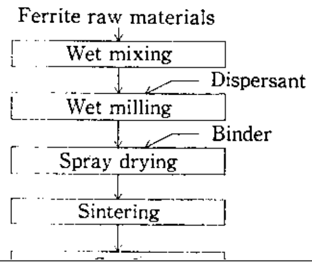

Photoconductor drum
Magnetic brush
Toner hopper

Table 1 Requirements for the characteristics of ferrite carrier

Magnetic properties	Saturated magnetization Coercive force Permeability
Electric properties	Specific resistivity Specific charge Dielectric constant
Powder characteristics	Mean diameter



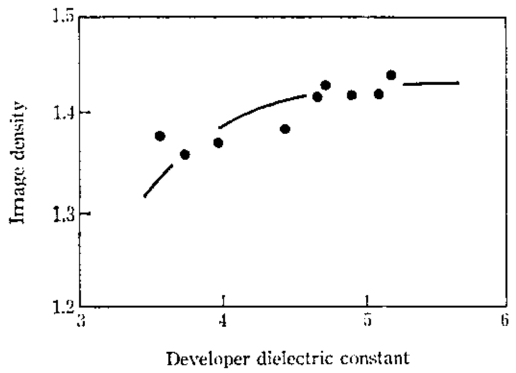


Fig. 5 Relationship between developer dielectric constant and image density

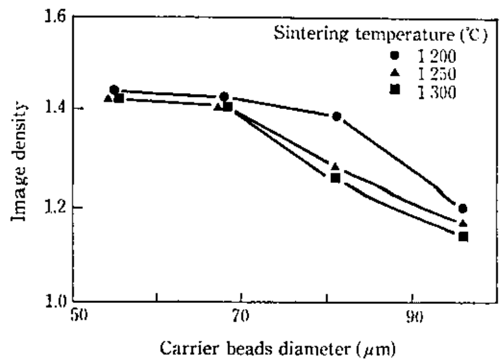


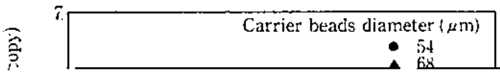
Fig. 6 Relationship between carrier beads diameter and image density for different sintering temperature

V_r: 現像ロール周速 (m/s)

V_p: 感光体周速 (m/s)

以上の実験結果から，一定の現像条件下でキャリアの誘電率，粒径を制御することによって，PPC の画像濃度を調整することがで

電界と現像ロールと感光体の周速比で決まることを表しており，感



接触帯電する際に，キャリアの粒界の誘電的性質が関与するため，キャリア表面の結晶粒とトナーとの対応関係が比電荷の分布に影響するのである