# Investigasi performa toner pada printer laser hasil variasi persentase nano carbon black = Investigation of toner performance on laser printer as variation of nano carbon black

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Abstrak

[ABSTRAK<br>
Carbon black (CB) merupakan material penting yang digunakan sebagai pewarna dan material fungsional di dalam toner. Partikel CB dalam ukuran nano meter diharapkan mampu menghasilkan toner dengan pola distribusi dan dispersi yang merata. Sintesis toner dilakukan dengan 3 variasi persentase berat (wt%) nano CB 10, 15 dan 20 % yang diball mill dengan kopolimer stirena/ akrilat (KSA), black oxide (BO) dan air. Serbuk toner yang telah disintesis dikarakterisasi dengan x-ray diffraction (XRD), Fourier transform infrared (FTIR) dan scanning electron microscopy/energy dispersive x-ray spectroscopy(SEM/EDX) serta uji performa toner melalui uji suseptibilitas magnetik, uji adhesi, dan uji kualitas gambar. Hasil karakterisasi SEM menunjukkan bahwa toner 10 wt% CB memiliki ukuran dan distribusi yang paling seragam. Hasil uji suseptibilitas magnetik menunjukkan nilai suseptibilitas magnetik toner hasil sintesis 10, 15 dan 20 wt% CB sebesar 1,02 x 10-4, 0,99 x 10-4, 1,11 x 10-4 m3/kg. Performa terbaik dalam kriteria nilai suseptibilitas, adhesivitas dan kualitas gambar diberikan oleh toner 10 wt% CB dibandingkan toner hasil sintesis lain dan toner komersil.
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ABSTRACT<br>
Carbon black(CB) is an important material used as a dye and functional materials in toner. CB particles in nano-meter size is expected to produce a toner with distribution and uniform dispersion. Synthesis of the toner was carried out 3 weight percentage variation of nano CB10, 15 and 20 % in the ball mill with styrene/acrylate copolymer(KSA), blackoxide (BO) and water. The resulted powder has been characterized with the x-ray diffraction (XRD), Fourier transform infrared (FTIR) and scanning electron microscopy/energy dispersivex-ray spectroscopy (SEM /EDX) and test the performance of toner through the tests of magnetic susceptibility, adhesion, and the quality of image. SEM characterization results indicate that the toner 10 CB has the size and the most uniform distribution. The average of magnetic susceptibility of synthesized toner 10 CB, 15 CB and 20 % CB is 1,02 x 10-4, 0,99 x 10-4, 1,11 x 10-4 m3/kg.The best performance was provided by 10CB toner in comparison to others synthesized and commercial toners.
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