INTISARI

EFEK ELEKTROHIDRODINAMIK PADA KRISTAL CAIR NEMATIK YANG TERORIENTASI SEJAJAR MENGGUNAKAN SERAT NANO

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Pengamatan terhadap efek elektrohidrodinamik (EHD) pada sampel planar kristal cair nematik *4-methoxy-benzilidine-4-buthyl-aniline* (MBBA) hasil penyejajaran serat nano telah berhasil dilakukan. *Polyvinyl Alcohol* (PVA) digunakan sebagai polimer dalam proses elektrospinning dengan kolektor jenis *gap* berbahan tembaga (Cu). Dihasilkan serat nano dengan diameter rata-rata $235 \pm 14nm$ dengan parameter kesejajaran 0.98 ± 0.02. Pemberian medan listrik eksternal pada sampel mengakibatkan gangguan arah orientasi direktor dan menimbulkan munculnya berbagai pola konveksi. Pola regular yang dapat teramati yaitu *Williams Domain* (WD), *fluctuating Williams Domain* (FWD), dan *Grid Pattern* (GP).

Kata kunci : EHD, sampel planar, kristal cair nematik, serat nano, WD, FWD, GP

ABSTRACT

ELECTROHYDRODYNAMICS EFFECT OF NEMATIC LIQUID CRYSTALS WHICH ARE ALIGNED BY NANOFIBER

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Effect of electrohydrodynamics (EHD) in nematic liquid crystal *4-methoxy-benzilidine-4-buthyl-aniline* (MBBA) planar cell are aligned by nanofiber have been observed. *Polyvinyl Alcohol* (PVA) were used as polymer in electrospinning process with copper (Cu) gap collector. Nanofiber with diameter $235 \pm 14nm$ and alignment parameter 0.98 ± 0.02 were resulted. Applied external electric field caused distortion of the director orientation and convection pattern was formed. Regular pattern such as *Williams Domain* (WD), *fluctuating Williams Domain* (FWD), and *Grid Pattern* (GP) has been observed.

Key words : EHD, nematic liquid crystal, planar cell, nanofiber, WD, FWD, GP