

## PEMBUATAN BENSINMETER DIGITAL PELACAK PEMALSUAN BENSIN

Oleh :

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### RINGKASAN

Telah dikembangkan metode kuantitatif untuk uji kemurnian bensin premium, bekerjanya berdasarkan perbedaan polaritas antara bensin dengan kerosin. Hasilnya berupa **Bensinmeter digital** yang mampu menganalisis kadar kerosin dalam bensin berdasarkan kuantitas kekeruhan (*turbidity*), setelah sampel bensin dicampur dengan larutan **Marker FR-02+**.

Dalam riset ini ada 3 (tiga) langkah yang dilakukan yaitu (a) menyusun formulasi larutan marker baru lewat kesetimbangan fasa cair-cair 3 komponen, (b) modifikasi larutan marker FR-0X sampai diperoleh sistem mikroemulsi, (c) merangkai instrumental Turbidimeter digital yang mampu mengukur kekeruhan sistem mikroemulsi.

Hasil yang didaapat adalah (1) diperoleh dua formulasi larutan marker baru yaitu (a) Marker FY-01 dengan komposisi n-Heksanol:Brij-35(1%) = 26:23 dan (b) Heksanol:Brij-35(1%) = 95:10; (2) larutan marker modifikasi dari FR-02 menjadi FR-02+; (3) dapat dibuat Bensinmeter digital dengan limit deteksi 0.2% menggunakan larutan Marker FR-02+ yang memiliki daerah linearitas lebih baik dibanding Marker FY-0X.

# DESIGNATED OF DIGITAL BENSINMETER OF GASOLINE ADULTERATION TRACER

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## SUMMARY

The quantitative method for purity testing of the gasoline premium has been investigated. This instrumental is performing base on polarity difference between gasoline and kerosin. The out coming is **Digital Bensinmeter** which capable to analysis of kerosin quantity in the gasoline, base on turbidity of sample when it was mixed with **Marker FR-02+** solution.

There were three action has been done in these research, i.e. (a) To construct the formula of new marker solution by three components liquid-liquid phase equilibrium, (b) modification of Marker FR-0X solution, until microemulsion system has been reached, (c) constructing of digital Bensinmeter with detecting capability of the turbidity of microemulsion system.

The result of this experiment was (1) It has been produced two news formulae of liquid marker i.e. (a) Marker FY-01 with n-hexanol:Brij-35(1%)=26:23 composition, (b) Marker FY-02 with n-hexanol:Brij-35(1%)=95:10 composition. (2) Modification formulae of Marker FR-02 to become Marker FR-02+. Liquid Marker FR-02+ was better formulae than Marker FY-0X. (3) Digital Bensinmeter has been constructed with 0,2% limit detection by Marker FR-02+.