

# Studi karakteristik resonator LC dan amplifier tipe bipolar junction transistor pada rangkaian osilator colpitts sebagai pengkondisi sinyal = Study of LC resonant and BIT-Tuned Amplifier circuit on Colpitts oscillator as signal conditioning

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## Abstrak

Telah dilakukan studi pengaruh perubahan nilai setiap komponen penyusun rangkaian Osilator Sensor tipe Colpitts pada perubahan Frekuensi Osilasi. Penelitian ini merupakan kelanjutan penelitian sebelumnya yang membahas pengembangan osilator sebagai pengkondisi sinyal sensor pada sistem instrumentasi.

Pengamatan menunjukkan elemen induktif pada rangkaian resonan dominan mempengaruhi frekuensi osilasi sehingga jenis transduser yang dikembangkan pada penelitian ini bersifat induktif. Dari pengembangan osilator Colpitts sebagai pengkondisi sinyal dalam sensor pergerakan, terlihat sensitivitas yang dihasilkan 0,0068 MHZ/mm.

<hr><i>A study about the effect of frequency changes caused by electric parameter's change on Colpitts oscillator have been done. This research is a continuation of previous studies that discuss about the development of oscillators as signal conditioning on the instrumentation system. This research shows that an inductive element in the dominant resonant series affecting the frequency of oscillation, so the type of transducer that was developed in this study is inductive. By the development of Colpitts' oscillator as the signal conditioning of displacement sensor, the result of the sensitivity is 0,0068MHz/mm.</i>