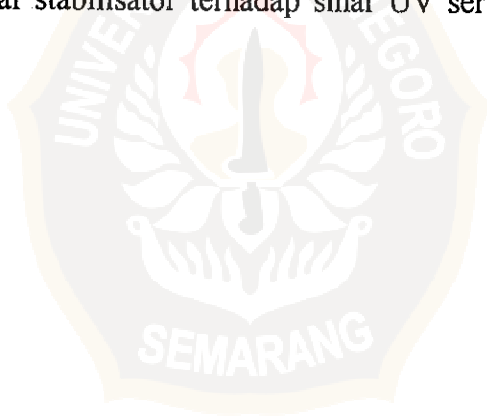


RINGKASAN

Telah diteliti pengaruh penambahan aditif FeCl_3 anhidrat terhadap sifat fotodegradatif PVC dan kitin terhadap sifat fotodegradatif dan biodegradatif PVC. Film PVC dibuat dengan metode penguapan pelarut. Pada pembuatan film PVC ditambahkan aditif FeCl_3 anhidrat sebanyak 0,5% dan kitin 5%. Film PVC difotodegradasi dengan sinar UV dari sumber lampu UV dekat dengan daya 15 watt dan range λ antara 300-350 nm selama 5, 10, dan 15 jam kemudian dibiodegradasi dengan bakteri *Clostridium* selama 1, 2, dan 3 minggu. Tingkat degradasi diukur melalui penurunan berat kering film, penurunan berat molekul, dan perubahan spektra UV dan IR.

Hasil Penelitian menunjukkan bahwa penurunan berat kering PVC terfotodegradasi beraditif FeCl_3 anhidrat mengalami peningkatan yang lebih besar dan film PVC beraditif kitin mengalami peningkatan paling rendah setelah terfotodegradasi 5 dan 10 jam. Peningkatan berat HCl yang terbebaskan paling besar dialami oleh film PVC beraditif FeCl_3 anhidrat dan mengalami penurunan paling rendah untuk film PVC beraditif kitin setelah terfotodegradasi 15 jam. Berat molekul PVC mengalami penurunan paling tinggi untuk film PVC beraditif FeCl_3 anhidrat dan paling rendah untuk film PVC beraditif kitin setelah terfotodegradasi 5 jam dan didapatkan pola spektra UV dan IR yang berbeda. Pada metode kombinasi fotodegradasi dan biodegradasi terjadi penurunan berat kering PVC dan berat molekul PVC yang lebih besar untuk film PVC beraditif campuran FeCl_3 anhidrat dan kitin dibandingkan film PVC tanpa aditif.

Dapat disimpulkan bahwa aditif FeCl_3 anhidrat berfungsi sebagai sensitisator, aditif kitin berfungsi sebagai stabilisator terhadap sinar UV serta dapat meningkatkan sifat biodegradatif PVC.



SUMMARY

It had been researched the effect of anhydrous FeCl_3 additive to photodegradative nature of PVC and chitin additive to photodegradative and biodegradative natures of PVC. PVC film's made by evaporating solvent's method. Anhydrous FeCl_3 0,5% and chitin 5% is added on PVC. PVC film's photodegraded by UV light is from 15 watt of UV lamp with ranges of λ about 300-350 nm as long 5, 10, and 15 hours and biodegraded by Clostridium's bacteria as long 1,2 and 3 weeks. The kinetics of degradation is followed by weight-loss kinetics, the changing of relative molecular weight, ultraviolet and infra red spectra.

The results showed that weight-loss of photodegraded PVC with anhydrous FeCl_3 additive was highest and PVC with chitin additive lowest as long 5 and 10 hours photodegraded. The HCl was highest lost in PVC with anhydrous FeCl_3 additive of and PVC with chitin additive lowest after 15 hour photodegraded. Decreasing of relative molecular weight was highest for PVC with anhydrous FeCl_3 additive and lowest for PVC with chitin additive and their UV and IR spectra are changing. With combined photodegradation and biodegradation the decreasing weight-loss and relative molecular weight of PVC was higher with anhydrous FeCl_3 and chitin additives mixture than PVC without additive.

It could be concluded that anhydrous FeCl_3 additive on PVC acted as UV sensitizer, chitin additive as UV stabilizer and also increase the biodegradative nature of PVC.

