

CHAPTER 4

Conclusion and suggestion

4.1 Conclusion

This novel synthetic method suited to produce high purity of nanoparticulate CaO_2 for use as a promising material in pilot scale waste treatment. Appropriate precursor for synthesis is $\text{Ca}(\text{NO}_3)_2$ with rapidly adding H_2O_2 . High purity nanoparticle, approximately 20-50 nm, with high surface area CaO_2 powders were obtained by this novel method. The CaO_2 exhibited photocatalytic oxidation determined by bleaching of methylene blue and photocatalytic reduction determined by reduction of resazurin under visible light. Furthermore, *E.coli* and *S.aureus* bacterial were inhibited when using CaO_2 powders and clear zone last for several weeks.

4.2 Suggestions

4.2.1 Oxygen releasing instrument should be adapted in order to studies rate of oxygen releasing accurately.

4.2.2 DO meter should be used for measurement oxygen volume.

4.2.3 Synthesis of CaO_2 powders in close condition might be done in order to reduce CaCO_3 .