

## ABSTRACT

*Teeth are the vital organ in the human body, its main function is as a mechanical digestion duty tear, chew, and bite. One of the abnormalities of the teeth is the inflammation of dental pulp or pulpitis that caused by bacteria. In dentistry, dentists not only examine patients objectively, but also use the diagnostic detection of abnormalities of the teeth more specific by using periapical radiographs. Examination of pulpitis can use quality detection gear manually by the dentist while as the development of the tooth detection technology can be implemented through digital image processing.*

*Type of research is descriptive with purpose is for detection of periapical part of the teeth with pulpitis periapical provisional estimates. Steps being taken include: pre-processing, feature extraction, and classification. Feature extraction method used is Local Binary Pattern and Fuzzy Logic as classification by using data samples to train as much as 45 images and 45 test images.*

*This final study results are obtained 80% accuracy rate with the computing time 1.88267 seconds with either good MOS category. It is expected also to the ability of this system, can help the dentist and expert radiologists that can be used as a proper standard of accuracy in the diagnosis of pulpitis.*

***Keyword: Periapical Radiograph, Pulpitis, Local Binary Pattern, Fuzzy Logic***