



Thesis Title	"DNA AND DENTAL X-RAY BASED FORENSIC HUMAN IDENTIFICATION SYSTEM"
Research Field	
Supervisor Name(s)	Asst. Prof. Dr. Muayad Sadik Croock
Student Name	Saja Dheyaa Khudhur
Abstract	
<p>Recently, numerous biometric methods are adopted in human identification systems particularly for forensic affairs. These methods are used to reduce the human efforts, related errors, cost, and consumed time in addition to increase the accuracy of human identification systems.</p> <p>This thesis proposes a forensic human identification system based on Deoxyribonucleic Acid (DNA) and dental X-ray biometrics tools. These tools are selected for their high accuracy and particular use in crimes and disasters in addition to the high verification capabilities in courts. The main contribution of the presented system is the combination of DNA and dental X-ray tools that can offer a high range of crossed information. This information is permanently used to solve the crimes and identify damaged bodies. Additionally, this combination overcomes the lack problem in database information and less verified identification. It is important to note that the proposed system includes three parts: DNA, dental X-ray as well as combined DNA and dental X-ray based human identifications to cover all investigation cases. It utilizes sixteen Short Tandem Repeats (STRs) DNA and a bite-wing X-ray images, used to extract the dental features for Iraqi Diyala Province Population. These features, which are: Standard Deviation (STD), Euler number and Intensity, have been extracted utilizing a three stages MATLAB algorithm.</p> <p>It is important to note that the proposed system has been verified in terms of collected dental X-Ray images by adding a Gaussian noise to the source images and finding the limitation of the system for the accepted distortion ratio of images. This distortion is the result of changing the shape of teeth, surrounding conditions and the image taken cases. In terms of matching of provided samples and the stored database, the mentioned features of images and DNA's STRs have been given weight ratio depending on their importance to increase the accuracy and verification ratio of the proposed system to be around (95%).</p>	
Student email	Saja_alzubaidy@yahoo.com