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Abstract ID: **AIMC-2017-STE-689**

SIGNED PRODUCT CORDIAL LABELING OF FLOWER GRAPH FNX4 MODIFIED BY SWITCHING VERTEX

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Abstract

Introduction: *A labeling is an assignment of labels to edges, vertices, or both edges and vertices of a graph. An edge labeling is a labeling of all edges by integers. A graph with such a labeling is an edge labeled graph. A vertex labeling is a labeling of all vertices by integers. A graph with such a labeling is a vertex labeled graph. A total labeling is a labeling of all vertices and edges by integers. A graph with such a labeling is a total labeled graph.*

In 1987, I Cahit introduce one type of graph labeling is a cordial labeling in a paper entitled "A Weaker Version of Graceful and Harmonious Graphs". In further developments, found signed product cordial labeling by Jayapal Baskar Babujee et al in a paper entitled "On Signed Product Cordial Labeling" . **Methodology:** *A vertex labeling of graph G^'*

f: V(G^')⟶{-1,1} with induced edge labeling f^*: E(G^')⟶{-1,1} defined by f^* (e=uv)=f(u)f(v) is called a signed product cordial labeling if |v_f (-1)-v_f (1)|≤1 and |e_f (-1)-e_f (1)|≤1, where v_f (-1) is the number of vertices labeled with -1, v_f (1) is the number of vertices labeled with 1, e_(f^*) (-1) is the number of edges labeled with -1, and e_(f^*) (1) is the number of edges labeled with 1. A graph G^' is signed product cordial if it admits signed product cordial labeling. **Findings:** *In this paper, we determine signed product cordial labeling of flower graph f_(n×4) modified by switching vertex. The result is that the flower graph f_(n×4) modified by switching vertex is signed product cordial labeling.* **Contribution:** *Signed product cordial labeling reviewed by Jayapal Baskar Babujee and Shobana Loganathan has been applied to the circle graph C_n , path graph P_n, star graph K_ (1, n), and bistar graph B_ (n, n). Not only applied to these graphs, signed product labeling cordials can also be applied to the modified graphs. Such as signed product cordial labeling studied by Santhi. M and J. James Albert is signed product labeling cordial to the graph circle C_n and star graph K_ (1, n) which modified by the corona G_1⊙G_2 and duplication at the vertex.*

From these studies, signed product cordial labeling not only applied in special graphs, but can be applied to graphs that have been modified. Therefore, the authors are interested in taking the theme of this paper regarding signed product cordial labeling of flower graph f_(nx4) modified by switching vertex.

Keywords: Signed product cordial labeling, switching vertex, flower graph

Abstract ID: **AIMC-2017-STE-693**

AUTHENTICATION USING FACE RECOGNITION IN ANDROID APPLICATION

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Abstract

Introduction: *Facial recognition (or face recognition) is a computer technology that identifies human faces in digital images. The study is to discuss the implementation of facial recognition techniques on an Android mobile phone, as well as the design and implementation of an application using facial recognition.* **Methodology:** *For this study, face recognition would assist in identifying and authenticate related personnel in protecting their confidential data on their mobile device. For the face detection, the researcher use LBP- based face detector and Eigenface algorithm for face recognition.* **Findings:** *In addition, any data that is stored in the project will not be at risk of being snooped or altered without permission.* **Contribution:** *As a result, the proposed system will be useful for android smartphone users to secure their files from unauthorized entities.*

Keywords: Android Application, Eigenface, Face recognition, Face Detection, Local binary pattern (LBP)

Abstract ID: **AIMC-2017-STE-696**

INVESTIGATION OF FACTORS AFFECTING DEVELOPMENT OF BROWNING DURING MAILLARD REACTION OF GELATIN

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Abstract

Introduction: *Gelatin is one of the most versatile food ingredients because of its multiple functional roles including stabilization, gelling, emulsifying, water holding capacity, mouth feel and adhesive property. However, presence of gelatin in food has now become a source of concern among some consumers due to religious, cultural and health reasons. The Muslim and Jews reject gelatin from porcine in line with their religious believes, the Chinese disallowed the medicine use of gelatin from other sources except that of donkey and vegetarians reject gelatin from animal source. The outbreak of bovine spongiform encephalopathy (BSE or "mad cow disease") has equally called for banning of use of mammalian gelatin in animal feeds. Hence, several studies have been conducted to developed some authentication protocols of gelatin in food and none food products.*

The aim of this study is to investigate the effects of some conditions that affect the development of browning during Maillard reaction of gelatin. The factors that were investigated include pH, concentration of xylose, type and concentration of metals, reaction time, and trypsin hydrolysis. **Methodology:** *Maillard reaction of gelatin*

About 100 ml of solution containing 0.5 % xylose and 2.0 % of gelatin was prepared at 60oC, each for fish, bovine and porcine gelation. The solutions were divided into different tubes and pH was adjusted to the desired value according to experimental design using 1.0 M HCl/NaOH. Each of the solutions was heated at 95oC for 48 hours. About 1 ml of the solution was removed at specific time interval. The mixture was allowed to cool at room temperature before the determination of browning index.

In order to test for effect of different concentration of sugar, the same procedure was followed but the concentration of sugar was varied according to the experimental design.

Also, the effect of effect of metals was invested by carrying out the experiment as described above in the presence of different metal ions at a concentration of 2 - 5mM.

Hydrolysis of gelatin

Gelatin hydrolyzates were produced using chymotrypsin to digest gelatin from fish, porcine and bovine. The digestion was carried out for 4 h at 25oC and enzyme-gelatin ratio of 1:250 (w:w). The reaction was stop by heating the mixture at 100oC for 10 min. The solutions were centrifuged at 3000 rpm for 15 min and the supernatants were discounted off and referred to as gelatin hydrolyzates solution.

Determination of browning index

The browning index (Bindex) of cooled mixture of gelatin/hydrolyzate containing xylose with or without Cu2+ was measured at 420 nm using micro-plate spectrophotometer. The change in browning index (□Bindex) was used to determine the effect of enzyme hydrolysis and presence of Cu2+.

Findings: *The development of browning of gelatin and hydrolyzate is affected by the reaction conditions of during xylose-induced Maillard reaction. Change in browning index increases with degradation of enzyme, concentration of xylose, presence of Cu and Fe ions and increase in type of reaction. However, increase in concentration of Cu ion above 2.5mM lack significant effect on change in browning index of gelatin hydrolysate. The discrimination of gelatin is achievable in the first 6 hr of reaction time. There was high increase in browning index of fish hydrolyzate compared to that of mammalian source. This approach will found useful for development of rapid and cheap UV-spectroscopic method for Halal authentication.* **Contribution:** *We have investigated the use of UV-spectroscopy for development of protocol for specie specific gelatin authentication for halal industrial. The transformation of gelatin during xylose-induced browning reaction was adequately described using change in browning index.*

Keywords: enzyme, hydrolysis, Maillard, gelatin, Halal authentication, catalysis

Abstract ID: **AIMC-2017-STE-703**

CMOS LOW NOISE AMPLIFIER FOR UWB APPLICATION: A REVIEW

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Abstract

Introduction: *A number of Low Noise Amplifier (LNA) design for ultra-wideband application had been produced with a various topology and techniques. The most common technology used for LNA production is using CMOS technology which is cheaper and can help reduce the size of chip. There are a few different size of CMOS technology used which are 0.18µm, 130nm and 90nm. This paper presents a compilation of review about design of low noise amplifier used for ultra-wideband application in term of different types of method, topology*