

## **Abstract for Symposium NAOP**

**Title: Decoding Unique Constellation of Cues from Emotional Facial Expressions across Experience of Different types of Emotions & EEG Correlates of Emotional Experience**

**Authors: Ananya Mondal, Pritha Mukhopadhyay**

### **Authors Details:**

#### **Ananya Mondal**

Research Scholar,  
Department of Psychology,  
University of Calcutta.  
[mailto:ananya87@gmail.com](mailto:mailto:ananya87@gmail.com)

#### **Pritha Mukhopadhyay,**

Professor,  
Department of Psychology,  
University of Calcutta.  
[prithamukhopadhyay@gmail.com](mailto:prithamukhopadhyay@gmail.com)

### **Abstract 1: ID0445NAOP2017**

**Title: Decoding Emotional facial expression: Behaviometric Approach**

**Author: Ananya Mondal**

The present study aims to determine the unique constellation of cues from emotional facial expressions (EFEs ) with changing instructions. Participants were given different instructions for portraying EFEs. Facial expressions were videotaped and behaviometric analysis was done based on Facial Action Coding System (FACS) and Euclidian distance analysis (EDA). Emotional facial expressions were examined by using FACS to decipher the parameters from anatomical perspective. Subsequently, EDA of action units were measured. The present study aims at deciphering EFEs unique to Indian culture and to detect differences between parameters of

expression. Facial muscle movements differ across three different emotional situations (happy, sad and anger) in different instructional conditions. The findings revealed that FACS and EDA are complementary to each other. The study established the feasibility of using EDA method to study EFEs along with anatomical and behavioral analysis (FACS). The study has shown the implication for a futuristic mathematical model.

Keywords: Emotion, Facial Expression, FACS, EDA

### **Abstract 2 ID0446NAOP2017**

**Title: Decoding Brain-Wave Activity Pattern during Initiation and Inhibition of Emotional Experience**

**Author: Pritha Mukhopadhyay, Ananya Mondal**

**Aim:** To determine EEG correlates of positive and negative emotion in three states: a) resting state; b) during experiencing emotion and c) inhibition of emotion due to orienting response.

**Method:** 40 young adults volunteered for the study. They were given instructions of the three states and simultaneously EEG recorded. 20 participants were given instructions for positive emotion and rest were given instruction for negative emotion. Between group design has been followed to control the residual effect of one emotion on another emotional state.

**Result:** differential activation pattern has been found for three different states.

- Resting state- activation of delta and theta wave
- Inhibition state (Orienting response)- reduced activation of delta and theta wave.
- Positive emotion- alpha activation in occipito-tempo-parital region
- Inhibition state (Orienting response) - reduced alpha activation in occipito-tempo-parital region and increased beta activation in fronto-temporal region

- Negative emotion - beta activation in fronto-tempo-parito-occipital region
- Inhibition state (Orienting response) - reduced beta activation in tempo-parito-occipital region and increased beta activation in left prefrontal region

Conclusion: Though a differential brain-wave activity pattern has been found further research is required. In earlier studies emotional stimuli like emotional pictures, films etc. have been used to evoke emotional experience. In this study the emotional state was evoked by imaginary technique i.e. recollection of personally significant emotionally colored events through imagination.

Key words: EEG, emotional experience, orienting response

### **Abstract 3 ID447NAOP2017**

**Title: Decoding Emotional Facial Expression as Diagnostic Index for Psychiatric Disorders.**

**Author: Professor Pritha Mukhopadhyay**

One of the richest avenues for nonverbal expression of emotion is emotional facial expression (EFE), which reflects inner psychic reality of an individual. It can be developed as a very important diagnostic index for psychiatric disorders. Decoding emotional facial expressions opens the door for future researches to explore the importance of facial expression as a measure in psychiatric diagnosis. An attempt has been made to provide a systematic review of the following issues: effectiveness of computational models to aid in diagnosis and usefulness of computational approach on facial expression analysis as a measure of psychiatric diagnosis. Possibility of bringing objectivity in psychiatric diagnosis through computational model of emotional facial expressions will be discussed.

Keywords: Emotion, Facial Expression, Computational Model, Psychiatric Diagnosis