

# **Research Paper**

**Name: Aiham Omar Altayeh**

**Email Address: ayham198747@hotmail.com**

**Research Topic: "IMAGE ANALYSIS TECHNIQUE AND GREY LEVEL CO- OCCURRENCE MATRICES FOR CHARACTERIZING SEDIMENTARY STRUCTURE"**

**ABSTRACT:** Texture is a standout amongst the most essential characteristics of a material defining the appearance of its surface. A new approach to identify the texture based on image processing of thin sections of different limestone rock samples is proposed here. By this method it is conceivable to identify textures of carbonate rocks in thin sections. Limestones are classified as Mudstone, Wackestone, Packstone, and Grainstone as per Dunham classification. This methodology utilizes grayscale image of thin section of rock sample as an input and extracts 23 numerical parameters. A multilayer perceptron neural network takes as input this features and gives, as output, the estimated class. A recent application of neural networks uses composite well-data to provide petrophysical information. To propose a new methodology to identify automatically textures of rocks in thin section by image processing and neural networks. In this perspective, this technique represents a potentially interesting approach for petroleum geologists to rapidly analyse many thin sections. This is a stepping stone to the future technology that will help in identifying all types of rocks without any lab tests and just from an image.