

## **ELECTRO-DEPOSITION OF METAL FROM DIFFERENT ELECTROLYTE AND THEIR FRACTAL CHARACTERISTICS**

**WASIM AHMED HYDERY<sup>1</sup>, GULAM RABBANI<sup>2</sup>, A. R KHAN<sup>3</sup> & YUSUF HANIF SHAIKH<sup>4</sup>**

<sup>1</sup>Maharashtra College of Arts, Commerce and Science, Mumbai, India

<sup>2,3</sup>Maulana Azad College Dr. Rafiq Zakaria Campus, Dr. Rafiq Zakaria Marg, Rauza Bagh, Aurangabad, India

<sup>4</sup>Research Guide, Shivaji Arts, Commerce and Science College, Kannad, India

### **ABSTRACT**

Electro-deposition of metal from different electrolyte solutions are studied in the form of dendritic patterns using circular cell geometry. Characterization of selected dendritic patterns in terms of fractal dimensions is presented. It is shown that electro-deposits of different metal obtained from their electrolyte solution possess self similarity and scale invariance and have fractal character. Comparison of different electrodeposits at same cell operating voltages with same electrolyte concentrations is discussed using the concept of fractals and fractal dimension.

**KEYWORDS:** Electro-Deposition, DLA, Fractal, Fractal Dimension, Self-Similarity, Dendritic Pattern