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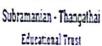
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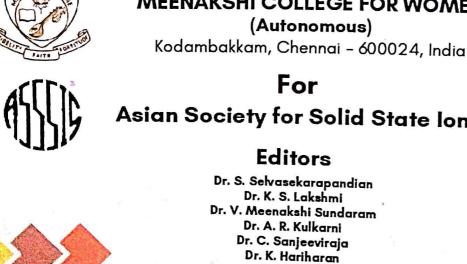














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# Primary Lithium ion-conducting battery fabrication using Cassia Auriculata as biomaterial-based electrolyte

A. Delicia<sup>a,b</sup>\*, A. Rajeswari<sup>a</sup>, S. Aafrin Hazaana<sup>b,c</sup>, R. Meera Naachiyar<sup>b,c</sup>, N. Muniraj @ Vignesh<sup>b,d</sup>, S. Selvasekarapandian<sup>b,e</sup>

Department of Chemistry, Fatima College (Affiliated to Madurai Kamaraj University), Madurai-625018, Tamil Nadu, India

Material Research Center, Coimbatore- 641045, Tamil Nadu, India.

<sup>c</sup>Research Centre of Physics, Fatima College (Affiliated to Madurai Kamaraj University), Madurai – 625018, Tamil Nadu, India

<sup>4</sup>Department of Physics, Mannar Thirumalai Naicker College (Affiliated to Madurai Kamaraj University), Madurai - 625004, India.

Department of Physics, Bharathiar University, Coimbatore-641046, India.

\*E-mail: delalourdhannai@email.com

#### Abstract

In the emerging world, there is a high demand for biomaterial based electrochemical devices [1]. In this study, development of Lithium ion conducting membrane using Cassia Auriculata and LiClO<sub>4</sub> has been made by Solution Casting method. The prepared biomaterial based membrane has been characterized by X-ray diffraction analysis (XRD) to study the crystalline/ amorphous nature of the biomaterial membrane. AC impedance technique has been utilized to study the conductivity of the samples. 1g Cassia Auriculata and 0.4 M.Wt.% of LiClO<sub>4</sub> membrane exhibits enhanced ionic conductivity of 3.81x10<sup>-4</sup>Scm<sup>-1</sup>. Transference number measurement is carried out to confirm that the majority of charge carriers are ions. By employing the highest ion-conducting biomaterial based membrane as an electrolyte, primary Lithium ion conducting battery has been fabricated and result with an open circuit voltage of 1.65V [2]. By applying load of 100KΩ, 16μA of current is drawn from the cell.

#### References

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