
PREFACE

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Organic Materials Electronics Needs Knowledge of Electrical Insulation Engineers



I have been involved with research and education regarding organic materials electronics for over 30 years in a University, after I completed my Doctor's study concerning the electrical properties of insulating films. About 30 years ago, this research field was fresh for Electronics and Electrical engineers, and it was merely a dream for researchers to realize organic molecular devices. However, the circumstances in this Organic Materials Electronics have changed drastically during the last 30 years, mainly due to the discovery and development of new functional materials, including conducting polymers, organic semiconductors, etc. The discovery of new functional materials has attracted chemists, physicists, electronics engineers, etc, and also attracted young researchers to this field. Consequently a variety of new ideas, methods and techniques to utilize new organic materials have been developed. Recent progress in this field is very rapid, and studies of Organic field effect transistors (OFETs), Organic Electroluminescent (OEL) devices, Organic solar cells, and so forth are very active all over the world. Organic Materials Electronics world is expected coming together with a very huge production market in near future. However the performance of these electronics devices is still not sufficient. I must say as that we are merely standing in front of so-called this new research field. This situation would be totally different from that of Electrical insulation and of High voltage engineering, where researchers have wealth knowledge of the research and technology in their field for the future technology. Researchers are still not aware of physics and engineering for Organic materials electronics. Electronics engineers prefer to think of things related to Organic Materials Electronics, on the basis of semiconductor device physics. However the actual device performance is totally different, mostly owing to the dielectric nature of materials used therein. Electrical Insulation Engineers are well aware of the physics and engineering in which so-called electric field makes a significant contribution. Ideas and knowledge from the insulation engineering field is definitely useful for Organic Materials Electronics. In the meantime, the EINA magazine have focused on research activities in the field of electrical insulation engineering and helped peoples who are working and studying in this field. However I believe that the EINA magazine will also give an impact to the research and education in the field of Organic Materials Electronics.

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