

## **Building solid scientific foundations for future plastic electronics**

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Organic electronic materials have raised interest in the academic and industrial communities owing to their wide range of properties. This class of materials promises to deliver new versatile electronic devices with various functionalities by combining diversity, flexibility, and light weight with the ease of processing and low cost. The field of organic electronics, also referred to as “plastic electronics,” has experienced dramatic progress in recent years. Its success has a strong impact on disciplines such as Physics, Chemistry, and Materials Science. Impressive steps were taken in understanding the fundamental issues that govern the physical processes, innovation in materials, processing methods, and device design. However, the performance, reproducibility, reliability, and stability of materials and devices remain a challenge, providing at the same time great research opportunities. I will discuss the current status of the field, including the accomplishments and the weaknesses in the “plastic revolution.” The key opportunities of plastic electronics that offer competitive advantages and interesting research resources will be highlighted. My contributions in the area of fundamental research needs of organic electronics will be emphasized. They include studies of structural and electronic properties of different single crystals and thin films, surface functionalization by nano-scale approaches, and investigation and control of various interfaces of interest in organic electronic devices (metal/organic, inorganic/organic, organic/organic).