**Title:**

* Flexible, Biodegradable, and Bioresorbable Electronics: The Future of Green Technology
* From E-Waste to Eco-Wonder: Sustainable Electronics for a Healthier Planet
* Soft, Sustainable, and Smart: Biodegradable Electronics for Health and Environmental Impact

**Summary:**

Sustainability and health are two of the most pressing global challenges identified by the United Nations. Electronics is a cornerstone of innovation in these sectors, driving advancements in healthcare technology, environmental monitoring, and sustainable manufacturing. However, conventional electronic components are typically non-biodegradable, leading to long-term environmental harm as they accumulate in landfills, releasing toxins. In addition, when implanted in the human body, these rigid devices are often incompatible with soft tissues, which can result in inflammation and other complications.

My research seeks to address these issues by pioneering solutions that are both sustainable and biocompatible. This includes the development of a novel library of electronic materials that are not only biodegradable but also bioresorbable and safe for use within biological environments. Our team utilizes green chemistry to create these materials, which are engineered to break down naturally after serving their purpose, thus minimizing electronic waste and toxicity. To bring these materials to life, we employ printed electronics, an emerging fabrication technique that enables the production of electronic components, circuits, and devices directly onto a variety of surfaces using nanoparticle inks. By converting our synthesized materials into printable inks, we are able to create soft, flexible, and customizable devices with unique form factors that are well-suited for applications in healthcare, wearable technology, and environmental sensing.

My talks will showcase case studies demonstrating the application of our biodegradable materials and flexible devices. These examples will highlight the potential of printed electronics to transform sectors such as personalized healthcare, bio-integrated wearables, and eco-friendly electronics, advancing both sustainability and human health in meaningful ways.