In the past decade, biodegradable elastomeric polymers have gained considerable attention due to the renewed interest in their applications in the fields of biomedical tissue engineering and implantable drug delivery systems. Elastomers can be regarded as one of the best biomaterials for such applications because their mechanical properties can be manipulated in a manner that makes them as soft as body tissues, they have the ability to recover and withstand the mechanical challenges upon implantation in a mobile part of the body and they have also proven to be well suited to drug controlled drug delivery applications.

Our lab has recently reported on the successful preparation and characterization of a novel family of poly (diol-co-tricarballylate) elastomers, using visible light photo initiated polymerization. This new patented family of elastomers possess many structural, mechanical and physicochemical properties that make them superior to the currently available biodegradable elastomers.

The purpose of this presentation is to shed light on the preparation, characterization and in vivo animal biocompatibility studies conducted on these new elastomers. In addition, a short illustration on their application in controlled drug delivery and tissue engineering and the current and future scope of work planned utilizing the latest Qatar National Research Fund – National Priorities Research Program 3rd cycle support received will also to be presented.