1. Record Nr. UNINA9910424640403321 Autore Bandyopadhyay Abhijit Titolo Engineering of thermoplastic elastomer with graphene and other anisotropic nanofillers / / Abhijit Bandyopadhyay, Poulomi Dasgupta, Sayan Basak Pubbl/distr/stampa Singapore:,: Springer,, [2020] ©2020 **ISBN** 981-15-9085-0 Edizione [1st ed. 2020.] Descrizione fisica 1 online resource (XXXI, 227 p. 128 illus., 95 illus. in color.) Collana Engineering Materials, , 1612-1317 Disciplina 780 Soggetti Materials Engineering **Building materials** Nanotechnology Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Introduction -- Anisotropic Nanofillers in TPE -- Preparation of Nota di contenuto Graphene based nanocomposite based on TPE -- Structure - property co-relation of Graphene/ Graphene derivative Based TPE -- Potential application of Graphene-TPE nanocomposite -- Conclusion. Sommario/riassunto This book is an effort to tether all the exuberant observations on adding nanomaterial in the TPE matrix. With an enhanced processing property along with amplified recyclability and reprocessing feature, thermoplastic elastomers (TPE) proves to be one of the most significant polymeric materials till date. As the scientific world evolves, these advanced materials have attuned themselves with various anisotropic nanomaterials to induce an enhanced property effect on the final product. On an additional note, authors have done extensive research on graphene, the most multifaceted element in the filler family keeping TPE and its derivate as the matrix martial. Cogitating the idea of a multidimensional readership, authors have analyzed the synthesis. derivatization, and properties of graphene and its derivatives separately. Apart from reviewing the future prospects and the potential

application of these nano-filled advanced materials, they have kept the structure—property relationship of graphene-based composites at the

cynosure to provide firm understanding on the blossoming of these elastomeric composites. The authors believe this book is a potential content for both professionals and academicians.