

(54) Title of the invention : NATURAL FIBER COMPOSITES WITH IMPROVED IMPACT RESISTANCE AND METHOD THEREOF

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| <p>(51) International classification :C08J0005040000, B29C0045000000, B29C0048000000, C22C0001000000, C08J0011060000</p> <p>(86) International Application No :NA<br/>Filing Date :NA</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number :NA<br/>Filing Date :NA</p> <p>(62) Divisional to Application Number :NA<br/>Filing Date :NA</p> | <p>(71)Name of Applicant :</p> <p><b>1)Dr.S.Rajakumar</b><br/>Address of Applicant :Associate Professor, Department of Manufacturing Engineering, Faculty of Engineering and Technology (FEAT), Annamalai University, Annamalainagar-608002, Chidambaram, Tamilnadu, India -----</p> <p><b>2)Mr. Jeswin Arputhabalan</b><br/><b>3)Mr.Siva.M</b><br/><b>4)Dr. M. Elangovan</b><br/><b>5)Mr.J.Dinesh Kumar</b><br/><b>6)Dr.V.Jaiganesh</b><br/><b>7)Dr. R. Premanand</b></p> <p>Name of Applicant : NA<br/>Address of Applicant : NA</p> <p>(72)Name of Inventor :</p> <p><b>1)Dr.S.Rajakumar</b><br/>Address of Applicant :Associate Professor, Department of Manufacturing Engineering, Faculty of Engineering and Technology (FEAT), Annamalai University, Annamalainagar-608002, Chidambaram, Tamilnadu, India -----</p> <p><b>2)Mr. Jeswin Arputhabalan</b><br/>Address of Applicant :Associate Professor, Department of Mechanical Engineering, Sri Sai Ram Institute of Technology, Sai Leo Nagar, West Tambaram, Chennai, Tamil Nadu 600044 -----</p> <p><b>3)Mr.Siva.M</b><br/>Address of Applicant :Assistant Professor, Department of Mechanical Engineering, St.Joseph’s College of Engineering, OMR, Chennai - 119 -----</p> <p><b>4)Dr. M. Elangovan</b><br/>Address of Applicant :Professor, Department of Aerospace Engineering, SNS College of Technology, SNS Kalvi Nagar, Saravanampatti, Sathy Main Road, Coimbatore 641035 -----</p> <p><b>5)Mr.J.Dinesh Kumar</b><br/>Address of Applicant :Assistant Professor, Department of Mechanical Engineering, Dr.Mahalingam College of Engineering and Technology, Pollachi -642003, Coimbatore District, Tamil Nadu, India -----</p> <p><b>6)Dr.V.Jaiganesh</b><br/>Address of Applicant :Professor, Department of Mechanical Engineering, Bharath Institute of Higher Education and Research, No.173, Agaram Road, Selaiyur, Tambaram, Chennai- 600073 -----</p> <p><b>7)Dr. R. Premanand</b><br/>Address of Applicant :Professor, Department of Humanities and Science (Physics), Sri Sai Ram Engineering College, West Tambaram, Chennai, Tamil Nadu – 600044 -----</p> |
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(57) Abstract :

The proposed invention pertains to a method for enhancing the impact resistance of natural fiber composites, addressing a longstanding challenge in materials science and engineering. Through a systematic approach encompassing advanced materials processing, composite formulation, and additive technologies, the method optimizes the interfacial bonding between natural fibers and resin matrices, thereby fortifying the composite structure. Advanced manufacturing techniques such as compression molding and injection molding ensure precise control over fiber orientation and distribution, enhancing mechanical properties. Surface treatments and additives are employed to further augment impact resistance, mitigating issues such as fiber fracture and delamination. The resulting natural fiber composites exhibit superior durability and resilience, making them suitable for a wide range of applications across industries. By offering a sustainable alternative to traditional materials, this innovation contributes to environmental stewardship and economic prosperity. Accompanied Drawing [FIGS. 1-2]

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