



Latvian Academy of Sciences

VITAUTS TAMUŽS' AWARD IN MECHANICS 2025

DR. JAYMIN VRAJLAL SANCHANIYA

The Vitauts Tamužs Award in Mechanics 2025 has been awarded to **Dr. Jaymin Vrajlal Sanchaniya** (Faculty of Civil and Mechanical Engineering, Riga Technical University) for his work "A Study on Fabrication Technique, Properties, and Applications of PAN Nanofibers," under the supervision of Assoc. Prof. Dr. sc. ing. Inga Ļašenko and co-supervisor Professor Dr. sc. ing. Andrejs Krasņikovs.

Dr. Sanchaniya completed his Ph.D. in Mechanics and Mechanical Engineering (Applied Mechanics) at Riga Technical University in 2024, following his Master's degree in Mechanics and Mechanical Engineering from RTU in 2020.

His research advances fundamental knowledge of nanofiber mechanics across diverse structural configurations. Furthermore, his investigation explains the correlation between the morphological parameters of electrospun nanofibers and the resultant mechanical properties exhibited by nanofiber matrices. Building on these fundamental insights, his work advances the field through innovative methodologies in nanofiber synthesis and characterization. Notably, he developed a finite element model for predicting mechanical properties, while simultaneously established novel dip-coating techniques to enhance material thermomechanical properties.

Dr. Sanchaniya's research interests span the fabrication and characterization of electrospun nanofibers, enhanced mechanical and thermal property of nanofiber mats, multifunctional nanofiber mats, and the development of advanced composite materials. His work has significant implications for various industrial applications, including filtration systems, biomedical devices, and structural composite materials. Notably, his development of laminated textile composites reinforced with electrospun nanofibers has led to significant advancements in non-crimping laminated textiles. His work in producing interfiber-bonded nanofibers has demonstrated remarkable potential for engineering robust nanofiber mats that maintain essential material properties while achieving enhanced structural integrity.

Currently, Dr. Sanchaniya works as a researcher at Riga Technical University, where he continues to advance the development of polymeric nanofiber mats. His research has benefited from international collaborations through mobility programmes at RWTH Aachen University, Germany, and other European institutions. He plans to further explore the mechanics and fabrication of multifunctional polymeric nanofiber mats and composite structures reinforced with nanofibers and their applications in advanced nanofiber-based materials.



Academician of the Latvian Academy of Sciences Vitauts Tamuzs (1935–2019) was a world-renowned specialist in the mechanics of composite materials and polymers, one of the founders of the Riga Scientific School. V. Tamuzs headed the laboratory at the Institute of Polymer Mechanics for many years, was the deputy director of the institute from 1975 to 1986. In 1973, he defended his dissertation for the degree of Doctor of Sciences of the USSR. In 1992, he received the degree of habilitation in engineering sciences. For many years, he was the editor-in-chief of the scientific journal "Mechanics of Composite Materials" (in English and Russian, published by Springer). The award recognizes the best young scientists in mechanics beginning with 2020.