Dear Members of the Search Committee,

I am writing to apply for the position of Assistant Professor in the Department of Mechanical and Aerospace Engineering at IITRAM, Ahmedabad. I have done my graduation and post-graduation, and doctorate from the Department of Aerospace Engineering at IIT Kharagpur (Website). Then, I worked as a Temporary Assistant Professor in the Aerospace Engineering Department at Punjab Engineering College, Chandigarh (Website) for one semester. Currently, I am a Post-Doctoral Research Fellow in the Department of Mechanical and Industrial Engineering at Toronto Metropolitan University, Toronto, Canada (Website) since December 2021. I am extremely interested in obtaining a faculty position at IITRAM, Ahmedabad, where I can contribute to its focus on engineering education, continue my research in the field of computational mechanics, and lead campus and professional service activities. My academic training and years of experience have prepared me to be an effective researcher and instructor in the Department of Mechanical and Aerospace Engineering.

My research area of interest is related to the linear and nonlinear analysis of flat, folded, curved panels made of advanced composite materials (laminated, sandwich, functionally graded material, piezoelectric, variable angle tow) using analytical and numerical methods such as Isogeometric and finite element methods. Particularly, I deal with bending, vibration, transient, harmonic, and buckling analysis in both dry and hydrothermal conditions. During my Ph.D. tenure, I extensively worked on the nonlinear bending and buckling analysis of laminated and sandwich curved panels in hygrothermal environment under the supervision of Prof. B. N. Singh and Prof. D. K. Maiti. I am currently working on analysis of the rotating structures under Prof. Donatus Oguamanam (Website) at TMU Canada. Moreover, I am also extending my Ph.D. works with functionally graded materials. Apart from this, I am also trying to do structural analysis through a deep learning approach.

My future research interest is to develop various open-source modules to do different types of structural analysis in the field of applied mechanics. The benefit of doing open-source work is to make a free pathway for academicians, researchers, and scientists so that the financial and human resources of our country can be utilized effectively. My GitHub repository contains my source codes related to my work (GitHub). I have extensively coded the finite element and Isogeometric programs in MATLAB for all these works and compared them with Navier, 3D Elasticity, and ANSYS solutions to validate the approach. I am skilled in Mathematica, C, C++, and Python, with data structure and algorithms knowledge.

I have gained a considerable amount of experience in structural analysis and still learning new techniques. My objective as a teacher will be to motivate my students to develop self-learning interests and critical thinking by having a strong understanding of fundamentals. I will also encourage and impart technical skills which will be helpful for academic and industrial projects. My future goal is to work in the direction of current industrial trends through different open source projects, research projects, industrial projects, and developing new products and services for the betterment of our Country. My kin interest in the above-mentioned areas and prior experience with various skills will greatly benefit me in realizing the work at hand.

Thank you for considering my application. My CV is enclosed, along with a list of my published works and references. I look forward to the possibility of joining your institute and contribute to make it as an eminent institution. Thank you for giving your time.