

Recommendation Letter

I am very much happy to recommend Mr Manikantan R Nair for the joint PhD. program in Mechanical Engineering at the IIT Kharagpur and University of Manchester. I was the Head of the Department of Mechanical Engineering at ACE College of Engineering while Manikantan was doing his undergraduate degree in Mechanical Engineering. I recommend him to you highly.

I am glad to comment that Mr Manikantan R Nair has completed Bachelor of Technology in Mechanical Engineering, with Distinction and Master of Technology in Technology Management from the most prestigious University of Kerala. He is one of the extraordinary students I have seen in my 13 years of teaching career. I taught him various subjects, including Engineering Mechanics, Manufacturing Process during his undergraduate studies, and he was the top student in the class. He has a high interest in Engineering and was mainly engaged with his work, putting forth persistence, devotion, and frequently going beyond the usual class assignments.

I believe Manikantan is academically fit and suitable to take the proposed course PhD. in Mechanical Engineering because he holds high interests and knowledge in areas like Manufacturing Processes, Operations Research, Innovation Management, Intellectual Property Rights, Data Analysis, and Management of Technology. He joined my research group and did his best to develop an expert system for predicting variations in the manufacturing process, and he also worked on my project to investigate the Indian scenario of the end-of-life vehicle management. He actively worked for literature review, questionnaire building, conducting interviews, visiting industries, data collection, modelling, analysis, and coding. Manikantan initiated a highly productive collaboration with other department faculties, which led to many good numbers of engineering works. The ideas of sustainability and efficiency drove him; hence he designed and prototyped solar trees implemented by the college latter. He also designed a sustainable air cooler using TRIZ methodology. He has visited many public sector organizations like Kerala Automobile Limited and conducted sustainability analysis to find the eco-efficiency barriers using interpretive structural modelling and the partial least square method. He took a noble cause from his neighborhood, the transportation issue faced by the disabled, and made an engineering solution for that problem in his final project. He designed, analyzed, and prototyped a low cost, a sustainable electric vehicle with zero-emission using remanufactured parts for solving the transportation problem of the disabled. His works are unique and significant in that he has written papers on them and made several discussions with professionals all over the country. He had co-authored many of my research papers. He had presented papers in several national and conferences, including the Indian Space Research Organization conference. Mr Manikantan has proved himself an outstanding researcher, and this is an exceptional achievement for anybody, particularly a youngster in rural India.

Manikantan has a high interest in design engineering. He has built up a series of essential aptitudes and techniques of the same. It is important to note that Manikantan taught design engineering to students while he was an undergraduate student. He took over preparing assignments and tests with much care and thought. His talks were clear and well organized, and it was evident that he had expended a great deal of effort to make the course the success that it was.

Manikantan is proficient in handling the English language. He did all his schooling and studies in the English language, he takes all his professional works and presentations in English, he participates in model United Nations conferences and delivers speeches representing various countries which makes him an excellent orator, public speaker, and hence I believe he can handle English well.

Manikantan has contributed a lot to the college community in various ways, most notably through his participation in various activities. He founded A.P.J Abdul Kalam Forum for Innovation when he was an undergraduate student and coordinated the entire college to create a platform that triggers innovation in the student community. He accepts responsibility readily and has organized several college-level and national level events. He was the college representative for all the startup initiatives by the Government of Kerala. He organized national level startup competition clubbing with Startup-India, a Government of India initiative. He was the chief coordinator for the college's career guidance and placement unit and was responsible for conducting various placement events in the college. I have seen him spending late nights in college either doing research works or coordinating some college activities. Frankly, I am impressed with his leadership, dedication, creativity, determination, helping mentality, and ability to schedule extracurricular activities around a full academic workload. I have never heard Manikantan complain about his workload or refuse any assignment that he has been given.

Manikantan's personal qualities are as impressive as his scholarly achievements. A kind, delicate, reasonable kid, and the maturity that he has shown leads me to believe him fit for accomplishing more research works, as he currently plans to do. His inspirations are not something forced upon him, nor does he wear it like a badge. He has enormous self-discipline. In short, I give Manikantan my highest recommendation. He is one of my finest, dedicated, versatile students, an outstanding researcher who will be an asset to your institute. He has demonstrated an uncanny ability to research, and I expect him to be one of the leading researchers in his field. He would be a good catch for any department, and I urge and sincerely hope you consider his candidacy seriously.

Sincerely,
Dr Azeem Hafiz P A,
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