

I am writing this reference letter as requested by KommaGnanaspoorthy, whom I know for the last five years as a student of the department of chemistry who is applying for the admission to IITKGP-University of Manchester Dual Doctoral Degree program for a project under computational Chemistry.

Spoorthy attended my courses 'Computational Chemistry', 'Computational Chemistry Laboratory', 'Molecular Spectroscopy and Molecular Structure' and cleared the courses with good grades, attendance, and class participation. She is currently doing her Master's project on "Global optimization using Machine learning tools" under my supervision, in which she studied various optimization techniques and algorithms to find stable optimized structures. She implemented a new Bonobo algorithm on Carbon clusters( $n=3-6$ ), analysed its performance and compared its results with other techniques.

She attended other courses like 'Introduction to Quantum Chemistry and Spectroscopy', 'Computational Structural biology' and 'Quantum methods in molecular simulations' for which she did a group project named 'Computational Design of Bidentate NHC-Cobalt Catalyst for the Hydrogenation of Hindered Alkenes' where they tried to devise a viable mechanism route to catalysis that can account for a highly efficient alkene reduction selectively. She is currently doing her minor degree in the Computer Science department and cleared courses like machine learning, High-Performance Parallel Programming, Algorithms, and its laboratory course which boosted her computational knowledge. She is maintaining a CGPA of 8.74 and is also a recipient of INSPIRE scholarship since 2016 and also qualified CSIR-NET and GATE examinations.

Spoorthy has also taken an active part in the HALL sports and cultural activities.

I strongly recommend her case.

 (P.K. CHATTARAJ)  
Signature