



09 March, 2023

TO WHOM IT MAY CONCERN

I have known Rajarathinavel since 2022. He was too curious about experimental works. He came to me with an interest to work on Optics and Lasers as an undergraduate student. I asked him to set up Michelson and Fabry-Perot Interferometer by collecting optics from the shelves of my lab. He did it quite successfully. He measured the coherence length of the Nd: YVO4 laser. Since then, he started working in my lab as an amateur apprentice, and from that, he has come a long way to become quite an expert in experimental works, especially with the very delicate instruments currently present in my lab. Rajarathinavel is highly enthusiastic about photonic devices and further he expressed his desire to continue working in experimental physics as a research scholar.

He also learned to set up Pump-Probe. He obtained a sound theoretical understanding and experimental skills in non-linear optics and photonics. He performed all 2nd order non-linear phenomena like Second Harmonic Generation, and Sum Frequency Generation for both type I and type II using nonlinear BBO (Barium Borate) crystal.

He is also doing his Master's project under my guidance. He has learned Terahertz Time Domain spectroscopy. He has presented his work on the nonlinear absorption coefficient as a partial fulfillment of his master's thesis. He always seems very curious about learning new things.

He is currently pursuing his Integrated MSc. course from my institute. He has attended courses like 'Experimental Methods' where he has secured the highest possible grade 'Ex' amongst the only two students in the class. He attended a specialized course namely 'Physics of Photonic Devices' offered by me. With his exceptional academic performance, he earned an 'A' grade and stood out as one of the top students. During this course, he was very attentive in class and regular in attendance.

Aside from academics, I must say that his personal qualities are equally impressive as his intellectual accomplishment. He has profound knowledge of programming languages like Python, C, and Latex and software like MATLAB. His tendency to bring perfection at work, his intellectual ability, hard work, and his originality of thought have always impressed me. In my opinion, he can be a good asset to the team. I have seen him working hard on lab projects. I must also inform you that he handles various laboratory apparatus and optics with care and uses them optimally.

I am also pleased to inform you that his involvement is not only limited to academics but other extra-curricular activities as well. He was part of the NSO (National Sports Organization). Throughout his extra academic work, he has shown qualities like teamwork, liability, leadership, public interaction, and management.

From my side, I wholeheartedly recommend Rajarathinavel for the Ph.D. program under your guidance at your esteemed institute. I am confident that he will also demonstrate the same diligence, perseverance, and optimism that he showed at IIT Kharagpur.

(Prasanta Kumar Datta)