

December xx, 2019  
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Dear Prof. xxxxxx xxx xxxxx:

I would like to express my interest to work on the pyrolysis of plastic wastes through the use of vortex reactors or conventional fluidized bed reactors as a Ph.D. student. I have more than three years of experience in modeling and simulation of chemical reactions and CFD problems in tandem with a strong background in reaction kinetics and transport phenomena. I have a master's degree in chemical engineering with a focus on process modeling, simulation, and control from the Sharif University of Technology (20xx-20xx). My master's thesis was modeling and simulation of SEWGS (sorption enhanced water gas shift) technology implemented in a natural gas combined cycle power plant equipped with a pre-combustion CO<sub>2</sub> capture which is described briefly in my CV and elaborated in more detail at [my website](#).

I am writing you this letter because I have a great interest to pursue my education in the field of renewable energy sources especially biomass and recycling plastic wastes through chemical recycling from the theoretical perspective such as mathematical modeling and simulation of CFD and CFD-DEM (direct element method) coupling problems and experimental exercise. When I became familiar with the predictive of turbulent reactive flows research group, I was fascinated just by your work and the opportunity that I can work there because I was always looking for working in a strong computational fluid dynamic group with a focus on modeling and simulation of CFD problems, chemical reactors, and combustion phenomena for my Ph.D. I can be helpful in the simulation and computational aspects of the work, and I am confident that I would be a suitable researcher to consider. I am not sure that I put enough emphasis that I am astonishingly interested to work in your research group, but I hope you understand my enthusiasm through this letter about your work. In my view, I cannot find a better position that gives me the satisfaction of working on something that I truly am fascinated about and was curious about for a long time.

Very truly yours.

[Full Name]

