145 Brookside Dr  
Fairfield, CT, 06824  
[Today’s Date]

[Company's Address]  
[City, State, ZIP Code]

Dear Hiring Manager,

I am writing to express my interest in the [Position Name] position at [Company Name]. With my ongoing pursuit of a Ph.D. in Materials Science and Engineering from Stony Brook University, as well as diverse research experiences at esteemed institutions like Oak Ridge and Brookhaven National Laboratory, I believe I can bring a unique blend of skills and expertise to your team.

My academic foundation, including an advanced certificate in Data and Computational Science, has been strengthened by coursework in simulation and modeling, mathematical analysis, thermodynamics of solids, and kinetics of materials, among others. Coupled with my undergraduate background in Psychology and pre-medical studies, I have honed an interdisciplinary approach to problem-solving, a skill I've found invaluable in the field of materials science.

In my current role as a Graduate Researcher at Oak Ridge Leadership Computing Facility, I have extensively leveraged molecular dynamics (MD) simulations using tools like AMBER and LAMMPS. My proficiency in advanced programming, specifically in C and Python, allowed me to optimize complex analytical processes, as evident from my development of the Python script for extracting parameters from MD trajectories and the optimization of batch scripts that significantly reduced computing time.

Furthermore, my time as a Materials Science Intern at Brookhaven National Laboratory saw me simulating plane-wave shielding properties of specific materials and developing in-house Python drivers to enhance in-situ lab processes. Such experiences in a dedicated research environment have not only expanded my technical skills but also my ability to innovate and think critically.

Finally, my publications in renowned journals like 'Polymer' and 'ACS Applied Materials and Interfaces' showcase my dedication to contributing meaningful research to the broader scientific community.

I am excited about the opportunity to bring my background in materials science, computational expertise, and passion for innovation to [Company Name]. I am particularly interested in [specific aspect(s) about the company or role], and I believe my skills and experiences make me an excellent fit for the position.

Thank you for considering my application. I look forward to the possibility of discussing how I can contribute to the exciting work at [Company Name]. Please feel free to contact me at (518) 603-5117 or yashasvi.bajaj2999@gmail.com to schedule a conversation.

Warm regards,

Avi Bajaj