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Tae Il Kim

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EDUCATION

University of California, Los Angeles   June 2010 - Present
Bachelor of Sciences in Chemical Engineering and Biochemistry, expected in June 2015.
- Upper Division Chemical Engineering GPA: 3.61
- Upper Division Biochemistry GPA: 3.94
- Awards: Dean's List Winter 2012, Spring 2013, Fall 2013, Winter 2014

COMPUTER SKILLS

Technical:
- Programming Languages: C++, MATLAB (proficient), HTML and CSS (proficient and self-taught).
- Application Software: Microsoft Office (Word, Excel, PowerPoint, Outlook, Publisher); Adobe Photoshop, LabVIEW, ElectroChemistry-lab, and AmScope.

Programming:
- Produced computerized Battle Ship game with artificial intelligence using C++.
- Designing own homepage using HTML, CSS.

WORK EXPERIENCE

Chemical-Biomolecular Engineering Research   June 2013 - Present
University of California, Los Angeles
- Objective: develop a cheaper and more efficient device that detects specific sequence of nucleic acid using silicon nitride/glass membrane nanopore.
- Assemble various device prototypes for testing and test them for the optimum experimental conditions.
- Conjugate peptide nucleic acid to nanoscale beads and perform zeta-potential analysis on the beads.
- Set up the experimental apparatus, and gather data using LabVIEW, EC-lab and AmScope softwares.
- Use MATLAB to filter low frequency noise in the experimental data, and analyze the data to determine the best combination of different layer depositions.

LABORATORY COURSES

Molecular Biotechnology Laboratory:
University of California, Los Angeles
- Amplified β-galactosidase from wild-type *E. coli* cells and cloned using PCR Blunt Vector and TOP 10 cells.
- Found optimal induction conditions in culturing through SDS-PAGE and applied the optimal conditions in fermentation.
- Operated Fast Protein Liquid Chromatography to isolate the produced β-galactosidase from fermentation and analyzed and characterized using activity, Bradford, and kinetic assays.
- Wrote an academic scientific paper that satisfies the requirements for the *Biotechnology and Bioengineering* journal for the final project.

Organic Chemistry Laboratory
University of California, Los Angeles
- Performed multi-step organic chemical synthesis reactions, which required distillation, extraction, and recrystallization.
- Analyzed the product purity using IR spectroscopy, UV-Vis spectroscopy, chromatography (gas, liquid, and thin layer), and ^{1}H and ^{13}C NMR.

EXTRACURRICULAR ACTIVITIES

Student Research Program   September 2011 – June 2014
UCLA AICHE Chem-E Car
- Member of 3rd place state Chem-E Car competition winning UCLA Chem-E Car.
- Make a shoe-box sized car that runs and stops solely based on chemical reactions.
- Perform experiments and gather data for the iodine clock reaction (stopping mechanism) of the car.
- Analyze the data gathered to find the optimal amount of Sodium Thiosulfate and Potassium Iodide.
- Represented the UCLA Chem-E Car in the 2013 AIChE Western Regional Chem-E Car competition.