# KUTAY BERK SEZGINEL

University of Pittsburgh, Pittsburgh, PA

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[http://kbsezginel.github.io](http://kbsezginel.github.io/)

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| **EDUCATION** | |  |
| ***PhD candidate in Chemical & Petroleum Engineering*** | Sep 2015 – Present | |
| University of Pittsburgh, Swanson School of Engineering | Pittsburgh, PA | |
| Dissertation Title: “*Computational materials design for molecular machinery: From nanoporous crystals to nanoscale racecars*”  Adviser: Dr. Christopher E. Wilmer | | |

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| ***M.S. in Chemical & Biological Engineering*** | Sep 2013 – June 2015 |
| Koc University, Graduate School of Science and Engineering | Istanbul, Turkey |

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| ***B.S. in Chemical & Biological Engineering*** | Sep 2008 – June 2013 |
| Koc University, School of Engineering, *Energy and Environmental Engineering Track* | Istanbul, Turkey |

## PROFESSIONAL EXPERIENCE

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| ***Software Fellow*** | Jan 2019 – Present |
| NuMat Technologies, Inc. | Skokie, IL |

* Software infrastructure development for materials design using molecular simulations and high performance cloud computing.
* Process controller development (hardware and software) including a web interface.

## RESEARCH EXPERIENCE

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| ***Graduate Research Assistant*** | Sep 2015 – Present |
| Hypothetical Materials Lab (WilmerLab), University of Pittsburgh | Pittsburgh, PA |

* Computational method development for functional materials design including materials such as metal-organic frameworks, supramolecular cages, and artificial molecular machines.
* Lab web development lead.

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| ***Graduate Research Assistant*** | Sep 2013 – June 2015 |
| Nanomaterials, Energy and Molecular Modelling Research Group, Koc University | Istanbul, Turkey |

* High-throughput screening of porous materials (MOFs) for gas storage and separation applications using grand canonical Monte Carlo (GCMC) and Molecular Dynamics (MD) simulations.
* Investigated the structural and thermodynamic properties of MOFs to understand methane adsorption mechanism and constructed models to predict natural gas storage of MOFs at various conditions.

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| ***Graduate Research Assistant*** | Sep 2013 – June 2015 |
| Koc University Tupras Energy Center (KUTEM) | Istanbul, Turkey |

* Post-synthetic modifications of porous materials using ionic liquids to improve gas storage/selectivity performances. Characterization by TGA, XRD, FT-IR, surface area and gas adsorption measurements.

## SKILLS

***Language*** English (Advanced), Turkish (Native)

***Software***

***Development* Python (Advanced), JavaScript (Advanced), HTML (Intermediate), Bash (Intermedidate)**

***Scientific* RASPA, LAMMPS, Orca, Materials Studio, Aspen HYSYS**

***Graphics/Video* Blender (Advanced), Inkscape (Advanced), Gimp (Intermediate)**

***GitHub*** [**https://github.com/kbsezginel**](https://github.com/kbsezginel)

***Laboratory*  FT-IR, PXRD, High Pressure Volumetric Analyzer, Chemisorption Analyzer, TGA, Glovebox**