Curriculum vitae — Anton Robert (03/23)

Contact

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Education

2019-2022 **PhD degree** in **Physical Chemistry** of the Paris Sciences et Lettres (PSL) Research University. Prepared at the École Normale Supérieure (ENS). Title: "New approach for electrostatic interactions at metal/liquid interfaces and applications for the graphene/water couple." Supervisor: Marie-Laure Bocquet.

2019 **Diploma of the ENS** of Paris, member of PSL Research University. Main discipline: chemistry.

2019 **Master degree** in analytical, physical, and theoretical chemistry (CAPT) from **Sorbonne University**.

2016-2017 **Bachelor degree** in science, technologies and health from **Sorbonne University**.

2014-2016 **Intensive scientific class** in physics and chemistry (PC) at **Lycée Pierre de Fermat** in Toulouse (France).

Work Experience

2019-2022 **Teaching** (~100 hours) for students in the CPES cursus (PSL). Tutorials in Python and practical work in chemistry laboratories.

2019 **Master thesis** at ENS. Solvation of bio-chemical molecules with the Molecular Density Functional Theory. Supervisor: Maximilien Levesque

2018-2019 Contracted visitor at **IBM Research**. Quantum computing applications for Chemistry. Supervisor: Ivano Tavernelli

Scientific productions

Patents

Robert, Anton, Panagiotis Barkoutsos, Giacomo Nannicini, Ivano Tavernelli, et Stefan Woerner. 2020. Enhancing hybrid quantum-classical algorithms for optimization. United States US10671696B2, filed 4 octobre 2018, et issued 2 juin 2020.

Robert, Anton, Panagiotis Barkoutsos, Stefan Woerner, et Ivano Tavernelli. 2021. Branched heteropolymer lattice model for quantum optimization. United States US20210035003A1, filed 30 juillet 2019, et issued 4 février 2021.

Articles

Baklanov, Aleksandr, Manuela Garnica, Anton Robert, Marie-Laure Bocquet, Knud Seufert, Johannes T. Küchle, Paul TP Ryan, Felix Haag, Reza Kakavandi, et Francesco Allegretti. 2020. « On-surface synthesis of nonmetal porphyrins ». *Journal of the American Chemical Society* 142 (4): 1871-81.

Barkoutsos, Panagiotis Kl, Giacomo Nannicini, Anton Robert, Ivano Tavernelli, et Stefan Woerner. 2020. « Improving variational quantum optimization using CVaR ». *Quantum* 4: 256.

Cuxart, Marc G., Knud Seufert, Valeria Chesnyak, Wajahat A. Waqas, Anton Robert, Marie-Laure Bocquet, Georg S. Duesberg, Hermann Sachdev, et Willi Auwärter. 2021. « Borophenes made easy ». *Science advances* 7 (45): eabk1490.

Grosjean, Benoît, Anton Robert, Rodolphe Vuilleumier, et Marie-Laure Bocquet. 2020. « Spontaneous liquid water dissociation on hybridised boron nitride and graphene atomic layers from ab initio molecular dynamics simulations ». *Physical Chemistry Chemical Physics* 22 (19): 10710-16.

Robert, Anton, Panagiotis Kl Barkoutsos, Stefan Woerner, et Ivano Tavernelli. 2021. « Resource-efficient quantum algorithm for protein folding ». *npj Quantum Information* 7 (1): 1-5.

Robert, Anton, Hélène Berthoumieux, et Marie-Laure Bocquet. 2023. « Coupled Interactions at the Ionic Graphene-Water Interface ». *Physical Review Letters* 130 (7): 076201.

Robert, Anton, Sohvi Luukkonen, et Maximilien Levesque. 2020. « Pressure correction for solvation theories ». *The Journal of Chemical Physics* 152 (19): 191103.

Oral communications

"Quantum computing for chemistry". Poster, University of **Nanjing (China)** in 2018.

"Analytical force fields with MDFT". Talk at the workshop "Atelier de modélisation des molécules d'intérêt biologique" in **Saclay (France)** in 2019.

"DFT simulations for STM experimentalists". Seminar at the Technological University of **Münich (Germany)** in 2020.