

Dr. Sigbjørn Løland Bore

Curriculum Vitae

Born: 11 August 1990, Stavanger, Norway
Address: Fagerborggata 44,
NO-0360 Oslo, Norway
Email: s.l.bore@kjemi.uio.no
Telephone: (+47) 928 81 237
Homepage: www.SigbjornBore.com



Education

2015–2020 **PhD in chemistry**, Hylleraas Center at the University of Oslo (UiO).
Title *Advances in the Hybrid Particle-Field Approach: Towards Biological Systems*
Supervisor Prof. Michele Cascella

2009–2012 **Masters in applied physics**, Norwegian University of Science and Technology (NTNU).
2014–2015
Title *High-Resolution Large Time-Step Schemes for Hyperbolic Conservation Laws*
Supervisors Assoc. Prof. Jon Andreas Støvneng and Dr. Tore Flåtten.

2012–2014 **Masters in complex systems**, Université Pierre-et-Marie-Curie (UPMC).
Title *Collective motion of dynamic spins*
Supervisor Dr. Olivier Dauchot.

Experience

2015–2018 **Lab instructor and examiner in physical chemistry (KJM1130)**
Computer lab instructor and examiner in molecular modelling (KJM5630).

2013 **Summer internship, The Curie Institute, Paris**
Title *Stochastic modeling of memory effects on the Hunchback gene activation in the fruit fly embryo*

2011 **Conversion of handwritten fluid mechanics compendium to latex for Prof. Iver Brevik**

Skills

Languages: Norwegian (first language), English (fluent), French (B2-level).
Programming: FORTRAN, PYTHON, C++, MATLAB.
Markup: HTML, L^AT_EX, Tikz.
Software: GROMACS, NAMD, VMD, LAMMPS.
Supercomputing: SLURM, PBS, SHELL-scripting, openMP, MPI.

Awards

- 1st place in Gløsmesterskapet. Engineering knowledge competition between all study programs at NTNU.

Scientific Papers

10. K. Schäfer, H.B. Kolli, M.K. Christensen, **SLB**, G. Diezemann, J. Gauss, G. Milano, R. Lund and M. Cascella, *Beyond the Molecular Packing Model: Understanding Morphological Transitions of Charged Surfactant Micelles*, submitted for peer-review (2020)
9. S. Franco-Ulloa, G. Tatulli, **SLB**, M. Moglianetti, P. Pompa, M. Cascella, M. De Vivo, *Dispersion state phase diagram of citrate-coated metallic nanoparticles in saline solutions*, [ChemRxiv](#) (2020)
8. M. Ledum, **SLB**, M. Cascella, *Automated Determination of Hybrid Particle-Field Parameters by Machine Learning*, [arXiv](#) (2020).
7. **SLB**, H.B. Kolli, A. De Nicola, M. Byshkin, T. Kawakatsu, G. Milano, M. Cascella, *Hybrid Particle-Field Molecular Dynamics Under Constant Pressure*, *J. Chem. Phys.* **152**, 184908 (2020).
6. **SLB**, T. Flåtten, *High-resolution large time-step schemes for inviscid fluid flow*, *Appl. Math. Model.* **81**, 263–278 (2020).
5. A. De Nicola, T.A. Soares, D.E.S. Santos, **SLB**, G.J.A. Sevink, M. Cascella and G. Milano *Aggregation of Lipid A Variants: a Hybrid Particle-Field Model*, *Biochim. Biophys. Acta*, in press (2020)
4. **SLB**, H.B. Kolli, T. Kawakatsu, G. Milano, M. Cascella, *Mesoscale electrostatics driving particle dynamics in non-homogeneous dielectrics*, *J. Chem. Theory Comput.* **15**, 2033–2041 (2019).
3. H.B. Kolli, A. De Nicola, **SLB**, K. Schäfer, G. Diezemann, J. Gauss, T. Kawakatsu, Z. Lu, Y. Zhu, G. Milano, M. Cascella, *Hybrid Particle-Field Molecular Dynamics Simulations of Charged Amphiphiles in Aqueous Environment*, *J. Chem. Theory Comput.* **14**, 4928–4937 (2018).
2. **SLB**, G. Milano, M. Cascella, *Hybrid Particle-Field Model for Conformational Dynamics of Peptide Chains*, *J. Chem. Theory Comput.* **14**, 1120–1130 (2018).
1. **SLB**, M. Schindler, K.N.T. Lam, E. Bertin, O. Dauchot, *Coupling spin to velocity: collective motion of Hamiltonian polar particles*, *J. Stat. Mech.: Theory Exp* **3**, 033305 (2016).

Selected Scientific Presentations

5. *Hybrid Particle-Field Molecular Dynamics Under Constant Pressure*, invited talk, Norwegian Chemical Society, Annual Meeting in Quantum and Computational Chemistry, Trondheim, Norway (2019)
4. *Molecular dynamics in a density dependent inhomogeneous dielectric*. Presentation at the National meeting of Norwegian Chemical Society, Lillestrøm, Norway (10.2018).
3. *Hybrid Particle-Field Model for Conformational Dynamics of Peptide Chains*. Poster presentation at CECAM workshop, University of Trento, Italy (08.2018).
2. *Coarse graining of protein backbone*. CTCC-seminar, Oslo, Norway (05.2016).
1. *Coarse grained models for proteins*. Presentation at the spring meeting of CTCC, Alta, Norway (04.2016).

Selected Writings in Norwegian

8. *I anledning telefonkioskens dag*, opinion piece, Aftenbladet, (2020)
7. *Den hellige treenigheten*, back cover causerie, Klassekampen, (2019)
6. *Hverdagshykleri*, opinion piece, Aftenbladet, (2018)
5. *Øyeblikket da du blir voksen*, back cover causerie, Klassekampen, (2018)
4. *Hund på bar*, back cover causerie, Klassekampen, (2018)
3. *Ukultur hos havets kardinaler*. back cover causerie, Klassekampen, (2018)
2. *Glem ikke å sette opp ølteltet*, opinion piece, Universitas, (2017)
1. *Make Frederikke greit again*, opinion piece, Universitas, (2016)