

Andrea Silva

E-mail:

EDUCATION

University of Southampton	Southampton, UK
PhD student within the Marie Skłodowska-Curie ITN Solution (European Project website: https://www.itn-solution.eu)	Oct. 2017 - Jan 2021
University of Milan, UniMi	Milano, Italy
Master of Science in Theoretical Physics, final evaluation 110/110 cum laude	Sep. 2011 - Oct. 2017
Bachelor of Science in General Physics, final evaluation 109/110	

RESEARCH EXPERIENCE

Post-Doc at CNR-IOM (Bando n. IOM AR 001/2021): Non-equilibrium MD Simulations of Atomistic Interfaces (PRIN UTFROM N. 20178PZCB5)	Trieste, Italy
Dr. Andrea Vanossi (CNR, SISSA), Dr. Layla Martin Samos (CNR, SISSA)	Mar 2021 - Present
Keywords: non-equilibrium physics, condensate matter, multiscale approach	

Visiting Scientist: Modelling and Simulations of Atomistic Friction	Trieste, Italy
Dr. Andrea Vanossi (CNR, SISSA), Prof. Erio Tosatti (SISSA, ICTP)	Dec 2020 - Mar 2021
Keywords: non-equilibrium physics, condensate matter, tribology	

PhD Thesis: Phase and Frictional Behaviour of Complex 2D Materials (ITN Solution N. 721642)	Southampton, UK
Dr. Denis Kramer (UoS), Prof. Tomas Polcar (nCATS, UoS, CTU)	Oct. 2017 - Jan 2021
Keywords: tribology, condensate matter, multi-scale modelling, material science	

Master's Thesis: Simulation of the Depinning Transition in 2D Colloid Monolayer	Milano, Italy
Prof. Nicola Manini (UniMi), Dr. Andrea Vanossi (CNR, SISSA)	Nov. 2016 - Oct. 2017
Text available at: http://materia.fisica.unimi.it/manini/theses/silva.pdf	
Keywords: tribology, soft matter, molecular dynamics simulation, phase transition	

Master 1 Stage, Pierre and Marie Curie University: Inference of Dependency Networks Between Gene Families	Paris, France
Dr. Marco Cosentino Lagomarsino (UPMC and CNRS)	Gen. 2015 - Mar. 2015
Keywords: dependency networks, genomics, information theory	

PUBLICATIONS

- B. Thorsten, A. Silva, N. Manini, A. Vanossi, R. Guerra, E. Tosatti, and C. Bechinger. "Experimental observation of the Aubry transition in two-dimensional colloidal monolayers." *Physical Review X* 8, no. 1 (2018): 011050 (<https://doi.org/10.1103/PhysRevX.8.011050>)
- A. Silva, V. E. P. Claerbout, T. Polcar, D. Kramer, and P. Nicolini, "Exploring the Stability of Twisted van der Waals Heterostructures", *ACS Appl. Mater. Interfaces* (2020) (<https://doi.org/10.1021/acsami.0c13971>).
- M. Liao, ..., A. Silva, D. Kramer, T. Polcar, ... , and Guangyu Zhang. "Ultra-low friction and edge-pinning effect in large-lattice-mismatch van der Waals heterostructures", *Nat. Mater.*(2021) (<https://doi.org/10.1038/s41563-021-01058-4>)
- A. Silva, T. Polcar, and D. Kramer, "Phase behaviour of (Ti:Mo)S₂ binary alloys arising from electron-lattice coupling", *Comput. Mater. Sci.* (2021) (<https://doi.org/10.1016/j.commatsci.2020.110044>)
- P. C. Torche, A. Silva, D. Kramer, T. Polcar, and O. Hovorka. "Multi-scale model predicting friction of crystalline materials", *Adv. Mater. Interfaces.* (2021) (<https://doi.org/10.1002/admi.202100914>)
- A. Silva, E. Tosatti, A. Vanossi, "Critical Peeling of Tethered Nanoribbons", submitted to *Nanoscale*
- X. Cao, Andrea Silva, E. Panizon, A. Vanossi, N. Manini, E. Tosatti, C. Bechinger, "Moiré-pattern evolution couples rotational and translational friction at crystalline interfaces", submitted to *PRX*

CONFERENCES AND SCHOOLS ATTENDED

Nanolubrication: From fundamentals to industrial applications (virtual, Durham, UK 2021)

APS March Meeting (virtual, Denver, USA 2020)

International Tribology Conference (Sendai, Japan, 2019)

Summer School Machine Learning for Material Science (Helsinki, Finland 2019)

Beilstein Nanotribology Symposium (Potsdam, Germany 2018)

CECAM Summer School on Atomistic Simulation Techniques (Trieste, Italy 2017)

Trieste, 07/02/2022

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