

FRANCESCO TAVANTI



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24 august 1986, Italian

Executive Summary: Versatile and passionate PhD candidate with experience in molecular dynamics simulations of proteins and gold nanoparticles using atomistic and coarse grained models.

ACADEMIC EXPERIENCE

02/06/2015- Visiting student at Massachusetts Institute of Technology

01/11/2015 Department of Materials Sciences and Engineering, MIT, <https://dmse.mit.edu>
Gold nanoparticles-proteins interaction using molecular dynamics simulations

2014-now PhD student in Models and Methods for Material and Environmental Sciences
University of Modena and Reggio Emilia, Modena (Italy), <http://www.unimore.it>
Gold nanoparticles-proteins interaction using molecular dynamics simulations and multi-scale models.

2009-2013 Master's degree in Medical Physics Score: 107/110
University of Pisa, Pisa (Italy), <http://www.unipi.it>
Main subjects: ionizing radiations, magnetic fields, radiation sources, data collection and analysis, detectors for radiations, biophysics, image analysis and image reconstruction, equipment of medical interest.

SKILLS

Languages: Italian (mother tongue), English: TOEFL iBT exam with score 90/120 and PET, good working knowledge.

Computer: Expertise on Windows and Mac OS, Office, Fortran, Matlab, DL_POLY, Gromacs, VMD, AutoDock and Gnuplot. Knowledge of DL_MESO, DL_FIELD and Material Studio.

PUBLISHED PAPERS

1. F. Tavanti, V. Tozzini, A Multi-Scale--Multi-Stable model for the Rhodopsin Photocycle, *Molecules*, 2014, **19**, 14961-14978.
2. F. Tavanti, A. Pedone, M. C. Menziani, A closer look into the ubiquitin corona on gold nanoparticles by computational studies, *New J. Chem.*, 2015, **39**, 2474-2482.
3. F. Tavanti, A. Pedone, M. C. Menziani, Competitive Binding of Proteins to Gold Nanoparticles disclosed by Molecular Dynamics Simulations, *J. Phys. Chem. C*, 2015, **119**, 22172-22180

TALKS

1. Tavanti, F., Pedone, A., Menziani, M. C. "Specific Interactions of Gold Nanoparticles with Amyloid- β fibrils". Italian Chemical Society, DCTC 2015, Rome, Italy, December 14-16, 2015.
2. Tavanti, F., Pedone, A., Menziani, M. C. "Monolayer-protected Gold Nanoparticles interacting with Amyloid- β fibrils: a Computational Study". Giornata della Chimica dell'Emilia Romagna, Modena, Italy, December 18, 2015.

POSTERS & ATTENDED SCHOOLS

1. Winter Modeling 2014 (04/13/2014 - 04/14/2014) Modena with title: 'Computational Modeling of Protein-Nanoparticle Interactions'.
2. CCP5 Summer School (07/13/2014 - 07/22/2014) Manchester (UK) with title: 'Computational Modeling of Ubiquitin-Corona Formation on Gold Nanoparticles'.
3. Giornata della chimica dell'Emilia Romagna (12/18/2014) Parma with title: 'Ubiquitins on gold nanoparticles: a molecular dynamics simulation'.
4. Multiscale Modelling of Condensed Phase and Biological Systems (13/04/2016 - 15/04/2016) Manchester (UK) with title: 'Monolayer-protected Gold Nanoparticles interacting with Amyloid Fibrils'.
1. CCP5 Summer School: 'Methods in molecular simulations' (07/13/2014 - 07/22/2014) Manchester (UK). Advanced course in 'Meso-scale Methods'.

PROJECTS for accessing High Performance Computing resources

1. IS CRA-C grant (2015): Proteins corona formation on gold nanoparticles, Galileo@CINECA (Tier 1), 75Khrs; PI
2. IS CRA-C grant (2016): Gold nanoparticles interacting with Alzheimer's fibrils, Galileo@CINECA (Tier 1), 35Khrs; PI

3. PRACE – Preparatory Access (2016): Insight into Silver Nanocube-protein interaction by computational simulations, Fermi@CINECA (Tier 0), 100Khrs; MareNostrum@BSC-CNS (Tier 0), 50Khrs; coll.

REFERENCES

Maria Cristina Menziani, Professor of Chemistry at the University of Modena and Reggio Emilia, mariacristina.menziani@unimore.it

Alfonso Pedone, Professor of Chemistry at the University of Modena and Reggio Emilia, alfonso.pedone@unimore.it

Valentina Tozzini, Scientist at the NEST-CNR-Nanoscience Institute at Scuola Normale Superiore, Pisa, v.tozzini@sns.it

Alfredo Alexander-Katz, Walter Henry Gale Associate Professor at Massachusetts Institute of Technology, Cambridge, MA, aalexand@mit.edu

