

Alessandra Zanut, PhD

EDUCATION:

- 07/01/2014 – 21/04/2017 **DOCTORAL SCHOOL IN NANOTECHNOLOGY**, European Social Fund (ESF).
Department of Physics, University of Trieste, Trieste (Italy)
ThunderNil S.r.l., Area science Park, Basovizza (TS), Italy
<http://www.nanotech.units.it>
ESF scholarship for the project: "Development of microarrays for genetic and proteic screening with electrochemiluminescence transduction scheme".
- 01/10/2010 – 16/07/2013 **MASTER'S DEGREE IN MEDICAL BIOTECHNOLOGY**, curricula Molecular Medicine.
University of Trieste, Trieste (Italy)
Final dissertation: "Development of Pharmacological strategies for personalized therapy in childhood Acute Lymphoblastic Leukaemia".
- 01/10/2007 – 16/12/2010. **BACHELOR'S DEGREE IN BIOTECHNOLOGY**
University of Trieste, Trieste (Italy)
Final dissertation: " Polymorphisms of glutathione S-transferase (GST-M1 and GST-T1) and relapse in childhood Acute Lymphoblastic Leukaemia (ALL)".

WORK EXPERIENCES:

- 01/01/2020 – ongoing **Research associate**
Advanced Science Research Center (ASRC)
City University of New York (CUNY) and NYU Tandon School of Engineering
Study of Superimposing tissue-specific topographies on 2D and 3D substrates under the supervision of Prof. Elisa Riedo, Faculty at NYU Tandon School of Engineering.
- 01/03/2017 – 31/10/2019 **Research Postdoctoral Fellow**
Alma Mater Studiorum, University of Bologna
via Selmi 2, 40126 Bologna (Italy),
<https://site.unibo.it/emfm/en>
Study of electrochemiluminescence phenomena in high sensitivity devices.
Project in collaboration with Hitachi High-Technologies S.r.l. and Roche Diagnostics Spa.
- 15/09/2014 – 15/07/2015 **Visiting researcher** at the National Engineering School of Chemistry, Biology and Physics (ENSCBP), Bordeaux (France).
- 19/09/2012 – 07/12/2012 **Visiting MSc Student** at St. Jude Children's Research Hospital, Memphis, TN (USA).
Department of Pharmaceutical Sciences at St. Jude Children's Hospital Research under the supervision of Dr. Steve W. Paugh and Dr. William E. Evans, PharmD.

TEACHING EXPERIENCES:

- 01/10/2017 – 31/10/201. **Teaching Tutor** at School of Science, Alma Mater Studiorum, University of Bologna (Italy).
Bachelor Course of "KINETICS and THERMODYNAMICS [cod. 69087] - [Module 2]: Laboratory of Thermodynamics".
- AY 2017/18 and 2018/19 **Co-Advisor** of 1 Master and 3 Bachelor Student thesis.

INTERNATIONAL MOBILITY:

- 19/09/2012 – 07/12/2012 **International Mobility Grant program (University of Trieste)**
St. Jude Children's Research Hospital
262 Danny Thomas Pl,
38105 Memphis, TN (United States)
www.stjude.org/
- 15/09/2014 – 15/07/2015 **PhD Mobility grant (FSE) / ERASMUS+ Program**

Institut des Sciences Moléculaires - Université de Bordeaux – ENSCBP
16, Avenue Pey-Berland
33607 PESSAC Cedex FRANCE
<http://nsysa.ism-bordeaux.cnrs.fr>

SCIENTIFIC PUBLICATIONS:

Peer-Reviewed Journal Articles

- S. W Paugh, E. J Bonten, D. Savic, L. B Ramsey, W. E Thierfelder, P. Gurung, R K S. Malireddi, M. Actis, A. Mayasundari, J. Min, D. R Coss, L.T Lauder milk, J. C Panetta, J R. McCorkle, Y. Fan, K.R Crews, G. Stocco, M. R Wilkinson, A. M Ferreira, C. Cheng, W. Yang, S. E Karol, C. A Fernandez, B. Diouf, C. Smith, J K. Hicks, **A. Zanut**, A. Giordanengo, D. Crona, J. J Bianchi, L. Holmfeldt, C. G Mullighan, M. L den Boer, R. Pieters, S. Jeha, T. L Dunwell F. Latif, D. Bhojwani, W. L Carroll, Ching-Hon Pui, R. M Myers, R Kiplin Guy, T.D. Kanneganti, M. V Relling & W. E Evans: "**NALP₃ inflammasome upregulation and CASP₁ cleavage of the glucocorticoid receptor cause glucocorticoid resistance in leukemia cells**", *Nature Genetics*. doi:10.1038/ng.3283, May 2015. Cited 51 times.
- M. Sentic, F. Virgilio, **A. Zanut**, D. Manojlovic, S. Arbaul, M. Tormen, N. Sojic, P. Ugo: "**Microscopic imaging and tuning of electrogenerated chemiluminescence with boron-doped diamond nanoelectrode arrays**", *Analytical and Bioanalytical Chemistry*. doi: 10.1007/s00216-016-9504-1, April 2016. Cited 18 times.
- Cefarin N., Cian A., Sonato A., Sovernigo E., Suran F., Teklu Z., **Zanut A.**, Pozzato A., Tormen M., "**Nanostructuring Methylammonium Lead Iodide Perovskite by Ultrafast Nano Imprinting Lithography**", *Microelectronic Engineering*. doi: <http://dx.doi.org/10.1016/j.mee.2017.02.023>, March 2017. Cited 3 times.
- S. Kesarkar, E. Rampazzo, **A. Zanut**, F. Palomba, M. Marcaccio, G. Valenti, L.Prodi, F. Paolucci: "**Dye-doped nanomaterials: Strategic design and role in electrochemiluminescence.**" *Current opinion in Electrochemistry*. <https://doi.org/10.1016/j.coelec.2017.11.012>, January 2018. Cited 2 time.
- G. Valenti, E. Rampazzo, S. Kesarkar, D. Genovese, A. Fiorani, **A. Zanut**, F. Palomba, M. Marcaccio, F. Paolucci, L.Prodi: "**Electrogenerated chemiluminescence from metal complexes-based nanoparticles for highly sensitive sensors applications.**" *Coordination Chemistry Reviews*. <https://doi.org/10.1016/j.ccr.2018.04.011>, July 2018. Cited 18 times
- S. Kesarkar, S. Valente, **A. Zanut**, F. Palomba, A. Fiorani, M. Marcaccio, E. Rampazzo, G. Valenti, F. Paolucci, L. Prodi: "**Neutral Dye Doped Silica Nanoparticles for Electrogenerated Chemiluminescence Signal Amplification**" *The Journal of Physical Chemistry C*. <https://doi.org/10.1021/acs.jpcc.8b11049>. February 2019.
- **A. Zanut**, A. Fiorani, S. Rebecani, S. Kesarkar, G. Valenti: "**Electrochemiluminescence as emerging microscopy techniques**", *Analytical and Bioanalytical Chemistry*. <https://doi.org/10.1007/s00216-019-01761-x>. April 2019.
- A. Fiorani, J. P. Merino, **A. Zanut**, A. Criado, G. Valenti, M. Prato, F. Paolucci: "**Advanced carbon nanomaterials for electrochemiluminescent biosensors applications**", *Current opinion in Electrochemistry*. <https://doi.org/10.1016/j.coelec.2019.04.018>, April 2019. Cited 1 time.
- Y. Kosto, **A. Zanut**, S. Franchi, Y. Yakovlev, I. Khalakhan, V. Matolin, K. Prince, G. Valenti, F. Paolucci, N. Tsud: "**Polycrystalline cerium oxide based electrochemical sensor for hydrogen peroxide**", *Journal of Material Chemistry B*. <https://doi.org/10.1016/j.apsusc.2019.05.205>, May 2019. Cited 1 time.
- **A. Zanut**, A. Fiorani, S. Canola, S. Toshiro, N. Ziebart, S. Rapino, T. Irie, H.P. Josel, F. Negri, M. Marcaccio, M. Windfuhr, I. Kyoko, G. Valenti, F. Paolucci: "**Untangling electrogenerated chemiluminescence mechanism empowers its analytical strength**", *Nature communications*. Accepted with major revision.

BOOK CHAPTERS:

- G. Valenti, A. Fiorani, E. Villani, A. Zanut, F. Paolucci "**Essential role of material in electrochemiluminescence application**", *Analytical Electrogenerated Chemiluminescence: From Fundamentals to Bioassays*, Detection Science Series No. 15, Published on April 19, 2019 by the Royal Society of Chemistry (RSC). ISBN 978-1-78801-414-4. <https://doi.org/10.1039/9781788015776-00159>

PATENTS:

- PCT/JP2019/30018: "Biomolecular analysis method and biomolecular analyzer", July 31, 2019.

ORAL COMMUNICATIONS:

- September 2019, Padova (Italy), **GEI 2019** - 21st Italian Electrochemical Meeting. "Probing Electrochemiluminescence response through DNA sensor for the detection of specific DNA sequences".
- February 2019, Firenze (Italy), **EBS 2019** – 2nd European Biosensor Symposium. "Electrochemiluminescent DNA sensor for the detection of specific DNA sequences".
- October 2017, Milano Marittima (Italy), **MYCS** - Merck Young Chemist Symposium. "Single Cell Electrochemiluminescence Imaging: From the Proof-of-Concept to Disposable Device-Based Analysis".
- January 2015, Trieste (Italy), **Short winter school in Nano and Bio – technology**. "Development of microarrays for proteic and genetic screening with electrochemical and electrochemiluminescence transduction scheme".

PROFESSIONAL DISTINCTIONS:

- Winner of a Poster Prize for excellent presentation sponsored by Analytical and Bioanalytical Chemistry intitled: "Microscopic imaging and tuning of electrogenerated chemiluminescence with borondoped diamond nanoelectrode arrays" by Zanut A., Sentic M., Virgilio F., D. Manojlovic, S. Arbaul, M. Tormen, N. Sojic, P. Ugo. Poster presented at the International Meeting on Electrogenerated Chemiluminescence, Bordeaux 2016.
- Granted for the project "*Pharmacological strategies for infliximab response prediction and therapeutic monitoring in pediatric inflammatory bowel diseases*" (grant from University of Trieste) in collaboration with Prof. Gabriele Stocco (Researcher at the Department of Life Sciences, University of Trieste).
- Winner of a 2020 Post-Doctoral Fellowships Travel Grant funded by the Italian foundation "*Fondazione Umberto Veronesi*".