Free radical detection in living cells with relaxometry

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Curriculum Vitae

Thamir Hamoh was born on the 28th of August 1988 in Mecca, Saudi Arabia. In 2008 he started his bachelor degree at King Abdulaziz University in Jeddah at the Faculty of Engineering specialized in Nuclear Physics. During his studies he did an internship at King Faisal specialist hospital to study the radiotherapy treatments affect. After his studies he was rewarded a scholarship (King Abdullah scholarship) to continue his studies abroad. Then he moved to Groningen, The Netherlands to continue his studies at the University of Groningen, in Biomedical Engineering specialized in clinical physics. During that period, he joined the bioimaging and bioanalysis group lead by Prof. Dr. Romana Schirhagl as in intern then he decided to continue his PhD in the same group. His research focused on using diamond magnetometry as a tool to investigate biomedical issues. During his PhD he was rewarded several awards, he was awarded at the venturelab weekend pitch competition, and he was awarded 3rd place at the falling wall competition. Moreover, he was awarded for best poster competition by MDPI.

Alongside his research, Thamir joined one year program (venturelab program) to educate him self on how to become an entrepreneur. His plan is to found a company to commercialize diamond magnetometry. With this direction he plans to combine the excitement of science and the challenge of entrepreneurship.

List of Publications:

1. Hemelaar SR, de Boer P, Chipaux M, Zuidema W, **Hamoh T**, Martinez FP, Nagl A, Hoogenboom JP, Giepmans BNG, Schirhagl R. Nanodiamonds as multi-purpose labels for microscopy. Sci Rep. 2017 Apr 7;7(1):720. doi: 10.1038/s41598-017-00797-2. PMID: 28389652; PMCID: PMC5429637.
2. Sigaeva, A, **Hamoh, T**, Perona, F & Schirhagl, R 2018, 'Fluorescent nanodiamonds: potential free radical detectors in live cells', *Free Radical Biology and Medicine*, vol. 120, pp. S87-S87. https://doi.org/10.1016/j.freeradbiomed.2018.04.288
3. **Hamoh T**, Morita A, Martinez FPP, Chipaux M, Sigaeva A, Mignon C, Laan KJV, Hochstetter A, Schirhagl R. The Fate of Lipid-Coated and Uncoated Fluorescent Nanodiamonds during Cell Division in Yeast. Nanomaterials (Basel). 2020 Mar 12;10(3):516. doi: 10.3390/nano10030516. PMID: 32178407; PMCID: PMC7153471.
4. **Hamoh T**, Morita A, Sigaeva A, Norouzi N, Nagl A, van der Laan KJ, Evans EPP, Schirhagl R. Targeting Nanodiamonds to the Nucleus in Yeast Cells. Nanomaterials (Basel). 2020 Oct 2;10(10):1962. doi: 10.3390/nano10101962. PMID: 33023102; PMCID: PMC7601435.
5. Morita A, Nusantara A. C, Martinez F.P.P, **Hamoh T**, Damle V.G, van der Laan, K.J, Sigaeva A, Vedelaar T, Chang M, Chipaux M, Schirhagl R. Quantum monitoring the metabolism of individual yeast mutant strain cells when aged, stressed or treated with antioxidant. Nature nanotechnology 2020. arXiv preprint arXiv:2007.16130. antioxidant. arXiv preprint arXiv:2007.16130.
6. Emily P.P. Evans, Jorien T.M. Scholten, Aldona Mzyk, Claudia Reyes-San-Martin, Arturo E. Llumbet, **Thamir Hamoh**, Eus G.J.M. Arts, Romana Schirhagl, Astrid E.P. Cantineau, Male subfertility and oxidative stress, Redox Biology, Volume 46, 2021, 102071, ISSN 2213-2317, https://doi.org/10.1016/j.redox.2021.102071.
7. **Thamir Hamoh**, Rokshana Sharmin, Alina Sigaeva, Aldona Mzyk, Viraj G. Damle, Aryan Morita, Thea Vedelaar, Romana Schirhagl, Fluorescence nano-diamonds for detecting free radical generation in real time during shear stress in human umbilical vein endothelial cells, 2021 (Submitted to ASC Sensors).
8. **Thamir Hamoh**, Claudia Reyes-San-Martin, Yue Zhang, Lotte Berendse, Carline Klijn, Runrun Li, Alina Sigaeva, Jakub Kawałko, Aldona Mzyk, Romana Schirhagl, Nanoscale MRI for selective labelling and localised free

radical measurements in the acrosomes of single sperm cells, 2021 (under preparation).

9. Yuchen Tian, Anggrek C. Nusantara, **Thamir Hamoh**, Aldona Mzyk, Xiaobo Tian, Felipe P. Perona Martinez, Runrun Li, Hjalmar P. Permentier, Romana Schirhagl, Functionalized Fluorescent Nano Diamonds for simultaneous drug delivery and quantum-sensing in Hela cells, 2021 (under revisions).
10. C. Mignon, A. R. Ortiz Moreno, S. K. Padamati, **T. Hamoh**, O. De Luca, M. Enache, P. Rudolf, V. Damle, Y. Ong, M. Chipaux, R. Schirhagl, High-speed magnetic resonance spectroscopy by diamond magnetometry, 2021 (under preparation).
11. Claudia Reyes-san Martin, Yue Zhang, **Thamir Hamoh**, Lotte Berendse, Carline Klijn, Runrun Li, Alina Sigava, Jakub Kawalbo, Aldona Mzyk, Romana Schirhagl, Biocompatibility of flurescent nanodiamonds for sperm cells. 2021 (Submitted to Nanoscale).
12. Linyan Nie , Anggrek C. Nusantara, Viraj G. Damle, Maxim Baranov, Mayeul Chipaux, Claudia Reyes San Martin, **Thamir Hamoh**, Petr Cigler, Geert van den Boogart, Romana Schirhagl, Quantum sensing of free radicals in primary human dendritic cells, 2021 (under revisions, Nano letters).
13. Neda Norouzi, Anggrek Citra Nusantara, Linyan Nie, Aryan Morita, Yue Zhang, **Thamir Hamoh**, Yori Ong, Romana Schirhagl, Relaxometry for detecting free radical generation during bacterias response to antibiotics, 2021 (submitted to small).
14. Claudia Reyes-San-Martin, **Thamir Hamoh**, Yue Zhang, Aldona Mzyk, Romana Schirhagl, Towards using fluorescent nanodiamonds for studying cell migration, 2021 (under preparation).