

# Stanford

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## Adam de la Zerda

Associate Professor of Structural Biology and, by courtesy, of Electrical Engineering

### Bio

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#### ACADEMIC APPOINTMENTS

- Associate Professor, Structural Biology
- Associate Professor (By courtesy), Electrical Engineering
- Member, Bio-X
- Member, Stanford Cancer Institute

#### LINKS

- de la Zerda Group Website: <http://delazerda.stanford.edu/>

### Research & Scholarship

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#### CURRENT RESEARCH AND SCHOLARLY INTERESTS

Molecular imaging technologies for studying cancer biology in vivo

### Teaching

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#### COURSES

##### 2023-24

- Biochips and Medical Imaging: EE 225, MATSCI 225 (Win)

##### 2022-23

- Biochips and Medical Imaging: EE 225, MATSCI 225, SBIO 225 (Win)

##### 2020-21

- Biochips and Medical Imaging: EE 225, MATSCI 225, SBIO 225 (Win)

#### GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Biophysics (Phd Program)
- Structural Biology (Phd Program)

### Publications

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#### PUBLICATIONS

- Flexible method for generating needle-shaped beams and its application in optical coherence tomography *Optica*

- Zhao, J., Winetraub, Y., Du, L., Vleck, A. V., Ichimura, K., Huang, C., Aasi, S. Z., Sarin, K. Y., de la Zerda, A.  
2022; 9 (8): 859-867
- **Speckle-modulating optical coherence tomography in living mice and humans** *NATURE COMMUNICATIONS*  
Liba, O., Lew, M. D., SoRelle, E. D., Dutta, R., Sen, D., Moshfeghi, D. M., Chu, S., de la Zerda, A.  
2017; 8: 15845
  - **Quantitative contrast-enhanced optical coherence tomography** *APPLIED PHYSICS LETTERS*  
Winetraub, Y., SoRelle, E. D., Liba, O., de la Zerda, A.  
2016; 108 (2)
  - **Contrast-enhanced optical coherence tomography with picomolar sensitivity for functional in vivo imaging.** *Scientific reports*  
Liba, O., SoRelle, E. D., Sen, D., de la Zerda, A.  
2016; 6: 23337-?
  - **Biofunctionalization of Large Gold Nanorods Realizes Ultrahigh-Sensitivity Optical Imaging Agents** *LANGMUIR*  
SoRelle, E. D., Liba, O., Hussain, Z., Gambhir, M., de la Zerda, A.  
2015; 31 (45): 12339-12347
  - **Optical coherence contrast imaging using gold nanorods in living mice eyes** *CLINICAL AND EXPERIMENTAL OPHTHALMOLOGY*  
de la Zerda, A., Prabhulkar, S., Perez, V. L., Ruggeri, M., Paranjape, A. S., Habte, F., Gambhir, S. S., Awdeh, R. M.  
2015; 43 (4): 358-366
  - **A correlative optical microscopy and scanning electron microscopy approach to locating nanoparticles in brain tumors.** *Micron*  
Kempen, P. J., Kircher, M. F., de la Zerda, A., Zavaleta, C. L., Jokerst, J. V., Mellinghoff, I. K., Gambhir, S. S., Sinclair, R.  
2015; 68: 70-76
  - **Imaging the Glycosylation State of Cell Surface Glycoproteins by Two-Photon Fluorescence Lifetime Imaging Microscopy** *ANGEWANDTE CHEMIE-INTERNATIONAL EDITION*  
Belardi, B., de la Zerda, A., Spiciarich, D. R., Maund, S. L., Peehl, D. M., Bertozzi, C. R.  
2013; 52 (52): 14045-14049
  - **Single step nanoplasmonic immunoassay for the measurement of protein biomarkers.** *Biosensors*  
Prabhulkar, S., de la Zerda, A., Paranjape, A., Awdeh, R. M.  
2013; 3 (1): 77-88
  - **Continuous sensing of tumor-targeted molecular probes with a vertical cavity surface emitting laser-based biosensor** *JOURNAL OF BIOMEDICAL OPTICS*  
Parashurama, N., O'Sullivan, T. D., de la Zerda, A., El Kalassi, P., Cho, S., Liu, H., Teed, R., Levy, H., Rosenberg, J., Cheng, Z., Levi, O., Harris, J. S., Gambhir, et al  
2012; 17 (11)
  - **Family of Enhanced Photoacoustic Imaging Agents for High-Sensitivity and Multiplexing Studies in Living Mice** *ACS NANO*  
de la Zerda, A., Bodapati, S., Teed, R., May, S. Y., Tabakman, S. M., Liu, Z., Khuri-Yakub, B. T., Chen, X., Dai, H., Gambhir, S. S.  
2012; 6 (6): 4694-4701
  - **A brain tumor molecular imaging strategy using a new triple-modality MRI-photoacoustic-Raman nanoparticle** *NATURE MEDICINE*  
Kircher, M. F., de la Zerda, A., Jokerst, J. V., Zavaleta, C. L., Kempen, P. J., Mittra, E., Pitter, K., Huang, R., Campos, C., Habte, F., Sinclair, R., Brennan, C. W., Mellinghoff, et al  
2012; 18 (5): 829-U235
  - **Advanced contrast nanoagents for photoacoustic molecular imaging, cytometry, blood test and photothermal theranostics** *CONTRAST MEDIA & MOLECULAR IMAGING*  
de la Zerda, A., Kim, J., Galanzha, E. I., Gambhir, S. S., Zharov, V. P.  
2011; 6 (5): 346-369
  - **A Comparison Between Time Domain and Spectral Imaging Systems for Imaging Quantum Dots in Small Living Animals** *MOLECULAR IMAGING AND BIOLOGY*  
de la Zerda, A., Bodapati, S., Teed, R., Schipper, M. L., Keren, S., Smith, B. R., Ng, J. S., Gambhir, S. S.  
2010; 12 (5): 500-508
  - **Ultrahigh Sensitivity Carbon Nanotube Agents for Photoacoustic Molecular Imaging in Living Mice** *NANO LETTERS*

de la Zerda, A., Liu, Z., Bodapati, S., Teed, R., Vaithilingam, S., Khuri-Yakub, B. T., Chen, X., Dai, H., Gambhir, S. S.  
2010; 10 (6): 2168-2172

- **Photoacoustic ocular imaging** *OPTICS LETTERS*  
de la Zerda, A., Paulus, Y. M., Teed, R., Bodapati, S., Dollberg, Y., Khuri-Yakub, B. T., Blumenkranz, M. S., Moshfeghi, D. M., Gambhir, S. S.  
2010; 35 (3): 270-272
- **Three-Dimensional Photoacoustic Imaging Using a Two-Dimensional CMUT Array** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*  
Vaithilingam, S., Ma, T., Furukawa, Y., Wygant, I. O., Zhuang, X., de la Zerda, A., Oralkan, O., Kamaya, A., Gambhir, S. S., Jeffrey, R. B., Khuri-Yakub, B. T.  
2009; 56 (11): 2411-2419
- **Implantable optical biosensor for in vivo molecular imaging** *Conference on Optical Fibers and Sensors for Medical Diagnostics and Treatment Applications IX*  
O'Sullivan, T. D., Munro, E., de la Zerda, A., Parashurama, N., Teed, R., Walls, Z., Levi, O., Gambhir, S. S., Harris, J. S.  
SPIE-INT SOC OPTICAL ENGINEERING.2009
- **Noninvasive Raman spectroscopy in living mice for evaluation of tumor targeting with carbon nanotubes** *NANO LETTERS*  
Zavaleta, C., de la Zerda, A., Liu, Z., Keren, S., Cheng, Z., Schipper, M., Chen, X., Dai, H., Gambhir, S. S.  
2008; 8 (9): 2800-2805
- **Carbon nanotubes as photoacoustic molecular imaging agents in living mice** *NATURE NANOTECHNOLOGY*  
de la Zerda, A., Zavaleta, C., Keren, S., Vaithilingam, S., Bodapati, S., Liu, Z., Levi, J., Smith, B. R., Ma, T., Oralkan, O., Cheng, Z., Chen, X., Dai, et al  
2008; 3 (9): 557-562
- **Noninvasive molecular imaging of small living subjects using Raman spectroscopy** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Keren, S., Zavaleta, C., Cheng, Z., de la Zerda, A., Gheysens, O., Gambhir, S. S.  
2008; 105 (15): 5844-5849
- **Drug delivery - Keeping tabs on nanocarriers** *NATURE NANOTECHNOLOGY*  
de la Zerda, A., Gambhir, S. S.  
2007; 2 (12): 745-746
- **Formulating adaptive radiation therapy (ART) treatment planning into a closed-loop control framework** *48th Annual Meeting of the American-Society-for-Therapeutic-Radiology-and-Oncology (ASTRO)*  
de la Zerda, A., Armbruster, B., Xing, L.  
IOP PUBLISHING LTD.2007: 4137-53