Claudio Vinegoni, Ph.D.

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Citizenship

Dual Citizenship, **USA**, **Italy**.

Education

- **University of Geneva**, Geneva, Switzerland.
  Ph.D. in Physics, in the group of Prof. N. Gisin (2002).
  Thesis title: *Nonlinear Effects in Optical Fibers*.
- **University of Trento**, Trento, Italy.
  M.Sc. in Physics, October 1996.
  Thesis title: *Structure and Vibrational Properties of Electrochromic Materials*
- **Scholarships**
  - Scholarship of the University of Trento (Winter – Spring 1996 & 1997)
  - Scholarship of the University of Pittsburgh (Summer 1997)

Present Appointment

- Faculty member (Instructor level) at Harvard Medical School at the *Center of System Biology* at Massachusetts General Hospital. Director of the In-vivo Microscopy Core.

Previous Appointments

- **09/2005–08/2007** Post-Doc researcher at the Center for Molecular Imaging Research CMIR at MGH-Harvard University in the Lab for Biooptics and Molecular Imaging (*prof. V. Ntziachristos*
- **07/2003–08/2005** Post-Doc at the Beckman Institute at the University of Illinois Urbana-Champaign, in the Biophotonics Imaging Laboratory.
- **05/2002–06/2003** Guest Research Fellow at Chalmers University (Sweden)- Photonics Laboratory.
- **05/2001–09/2001** Guest researcher at EXFO (Quebec, CAN)
- **03/1999–01/2002** Research Assistant at the University of Geneva, CH
- **06/1998–03/1999** Research Assistant at the University of Pittsburgh, PA.
- **03/1997–06/1998** Technical Supervisor of the Ultrafast Spectroscopy Univ. of Trento (Italy).
- **10/1996–03/1997** Research Assistant in the Raman Spectroscopy Laboratory.

Current Research Activity

The current research activity involves the development of novel optical (micro/macro)scopic molecular imaging techniques that allow to generate *in-vivo* three-dimensional data in optically diffusive non-transparent living organisms with a size up to a few millimeters providing both *in-vivo* anatomical and functional imaging. Development of new fluorescence molecular tomography techniques in diffusive regime for mouse imaging. Other research activities involve in vivo near infrared fluorescence imaging of protease activity in rabbit models of atherosclerosis, and development of combined optical and opto–acustic multispectral tomographic imaging for *in-vivo* imaging applications. Leader of the in-vivo microscopy core responsible for developing new applications for novel microscopy imaging systems and design and conduct cutting-edge experiments. Other research interests involved the exploitation of molecular specificity for optical coherence tomography (OCT) combined with multiphoton imaging, and the study of CARS and Raman spectroscopy applied in the biomedical field (cancer, DNA imaging).

Scientific Contributions

Author and coauthor of 110 scientific contributions. Among them, 1 Invited Review Chapter for the Academic Press, 1 article on the OPN issue "Optics in 2005", 52 articles, among published and submitted onto international scientific journals, 56 oral presentations and poster sessions at international conferences, and 32 proceedings.

Grants

- ◇ Winner of a call for proposal major projects (400k €) in order to establish an optical neuroimaging laboratory at the Center for Mind/Brain Sciences (Trento, Italy).
- ◇ Winner of SBIR NIST solicitation in collaboration with Distant Focus, for the development of a combined optical coherence/multiphoton microscope.

Awards

- ◇ "Venice Summer School on PMD" Award for best paper presented at ECOC 2003.
- ◇ Awarded with a travel grant to the Centennial Atlanta Meeting 1999 (APS).
- ◇ Best paper presented at the E-MRS'98 Strasbourg.

Languages

Fluent in English (TOEFL score above 600). German written and spoken at a good level. French at a beginner colloquial level. Basic Arabic. Italian mother tongue.

Others

- ◇ Private consultant at Genex for the development 3D diffusion imaging system.
- ◇ Private consultant at Distant Focus for the development of a commercial integrated microscope.

Skills

Biomedical imaging, Optical microscopy, Multiphoton microscopy, Optical spectroscopy (Raman, CARS, luminescence, time resolved), OCT, Fiber optics, Fiber optics metrology, Polarization mode dispersion, Solid state physics.

Research Interests

Investigate and develop new optical imaging techniques for biomedical and clinical imaging.

SEPTEMBER 2005–AUGUST 2007

◇ Post-Doc Researcher at the Center for Molecular Imaging Research at MGH, Harvard University in the Biooptics and Molecular Imaging Laboratory coordinated by Prof. V. Ntziachristos.

Research activity involved the development of a novel optical (micro/macro)scopic imaging technique that allows to generate *in-vivo* three-dimensional data in optically diffusive non-transparent living organisms with a size up to a few millimeters providing both *in-vivo* anatomical and functional imaging. Other research activities involved in vivo near infrared fluorescence imaging of protease activity in rabbit models of atherosclerosis, and development of combined optical and opto–acustic multispectral tomographic imaging for *in-vivo* imaging applications.

JULY 2003–AUGUST 2005

◇ Post-Doc at the Beckman Institute at the University of Illinois Urbana-Champaign in the Biophotonics Imaging Laboratory coordinated by prof. Stephen A. Boppart.

The research done concerned the development and the application of new optical techniques for biomedical imaging, in particular cancer imaging, functional imaging in engineered tissues, and neural imaging. Two distinct separate projects were completed. For the first the main idea was to exploit the capabilities of optical coherence tomography (OCT) in a more profitable way. Optical coherence tomography is an emerging state-of-the-art imaging modality, capable of providing micron-scale images of subsurface biological tissue. It is analogous to ultrasound, but instead of using sound waves, it uses low-coherence light. In addition it performs cross-sectional imaging by measuring the backscattered intensity of light from structures in tissues. The technique has received very high interest in particular in the medical community. Unfortunately the problem is that OCT does not allow to discriminate between different molecules but gives information only on the reflectivity properties of the tissues. To solve this problem we have developed a new technique called CARS interferometric imaging. The idea consists in exploiting the coherent properties of Stimulated Raman scattering to obtain fingerprint information about different molecules present in the tissues. The second project involved the development of a two photon microscope combined with an OCT. In this case information about endogenous or exogenous markers can be obtained with the two photon microscope while OCT gives structural information. This setup revealed itself to be very successful and an improved version of it will be soon delivered to NIST. At present the research activity done, gave rise to 8 published papers, 21 conference and 12 proceedings.

MAY 2002–JUNE 2003

◇ Guest Researcher at Chalmers University in Goteborg (Sweden) in the Photonics Lab coordinated by prof. M. Karlsson and prof. P. Andreksson.

After my Ph.D. I had the extraordinary opportunity to join as a guest researcher, the group of prof. M. Karlsson and prof. P. Andrekson at Chalmers University. In fact, after my Ph.D. I wanted to study in more details the problematic of real data transmission in optical fibers and optical fiber links. The group is a leading one in the world for what concerns PMD issues and for high speed TDM and WDM transmission. The research activity involved the study of the interplay between PMD and nonlinear effects in optical fibers. In particular Ive built an optical fiber recirculating loop for studies of the statistics of PDL and PMD in optical links. The work was highly original and gave rise to the publication of two papers (one appeared on a special issue of J. Lightwave Technology entirely devoted to PMD) and two conferences. One work was awarded too as best paper on PMD presented at CLEO 2003. Another part of the research involved the study of long term measurements of PDL and PMD in a real fiber optics link (600 km) and data are still under study. The research done gave rise to 2

published papers, 2 conferences and 2 proceedings.

MAY 2001–SEPTEMBER 2001

◇ Guest Researcher at EXFO (Quebec, CAN), in the Research and Development unit, Director Dr. Greg Schinn.

During my Ph.D. in Geneva I always considered important to find new ways to combine research with practical use. For this reason in year 2001, I was invited as guest researcher at EXFO Company, Quebec. The company is a world leader in the design and production of telecom instruments. The main idea for my presence at the company was to develop a prototype whose conception was started during my Ph.D. in Geneva. The project aimed at the possibility to measure in a distributed way the chromatic dispersion in an optical fiber. The project was extremely successful and went even more far its first objectives. In fact it allowed for the first time to measure in a distributed way the nonlinear coefficient along an optical fiber. The work resulted in the publishing of 1 paper, 2 proceedings and the presentation of the work to 2 conferences.

MARCH 1999–JANUARY 2002

◇ Research Assistant at the University of Geneva, in the group of Prof. N. Gisin.

I had the opportunity to do my Ph.D. in one of the most scientific active groups in the world, under the supervision of prof. N. Gisin. Prof. N. Gisin is a leading authority in the field of quantum optics and polarization mode dispersion. The research field in which I worked regarded the study of nonlinear effects in optical fibers and their exploitation for optical switches, the study of nonlinear PMD, and fiber optics metrology. It is worth mentioning that during my Ph.D. I enjoyed to do active research even in the other fields in which the group was active, like for example quantum optics, without remaining exclusively confined in the telecom research area. This lead to the realization of many different projects like for example the building of an innovative single photon counting near-field optical microscope in the near infrared, and the study for the generation of photon pairs in optical fibers. During my Ph.D. I was an active member of an ITU round robin coordinated by prof. Namihira concerning measurements of nonlinear coefficient in optical fibers. The round robin was started in order to establish different techniques as a reference standard for the industry community to measure the nonlinearity of optical fibers. The method we developed in Geneva was an original one, and for this reason we were invited to participate in the project. From the research activity done during the Ph.D. 9 papers were published, and 2 are currently submitted. The work done was presented at international conferences giving rise to 14 conference contributions, and 11 proceedings.

JUNE 1998–MARCH 1999

◇ Research Assistant at the University of Pittsburgh (PA) in the group of Prof. J. Levy.

The research project in which I was involved regarded the design, construction and usage of a femto-second optical technique for pump and probe measurements via near field scanning optical microscopy. The first part of the project was successfully completed and a complete reflective pump and probe setup was made with a temporal resolution of 120 fsec. Ive also worked on the assembly of a confocal microscope in order to do measurements on ferroelectric materials in order to study the rearrangement of the ferroelectric domains. The work done during this brief time lead to 1 published paper, 2 proceedings and 4 conferences.

MARCH 1997–JUNE 1998

◇ Technical Supervisor of the Ultrafast Spectroscopy University of Trento (Italy), under the supervision of prof. L. Pavesi.

The research done during this time was focalized on photoluminescence spectroscopy on times scales of order of picoseconds or femtoseconds (upconversion arrangement). In particular Ive worked on poroussilicon microcavities and on quantum wells in order to produce Bragg reflectors and to study the fast recombination processes. The work involved both the characterization and the production of poroussilicon microcavities. At the same time Ive worked as Assistant Instructor for the course of Experimental Physics II (electronics and electrical circuits theory) at the second year of the Diploma in Metodologie Fisiche at the University of Trento, Dept. of Physics. The work done gave rise to the publication of 7 papers, 1 proceedings and 6 conferences. In addition to that I was Invited Author from the Academic Press to write an extensive review article on porous silicon microcavities entitled Porous Silicon Microcavities. The chapter was published in the Book Silicon-Based Materials and Devices, Academic Press.

OCTOBER 1996–MARCH 1997

◇ Research Assistant at Raman Spectroscopy Laboratory, under the supervision of Prof. G. Mariotto.

During this time, and part of my M.Sc. thesis Ive worked on the effects of the phonon confinement theory and mechanical stress in nanocrystalline diamond. For this studies Raman spectroscopy is a particularly suited characterization technique because it allows to follow the relaxation of the phonon selection rules as the diamond structures becomes smaller and smaller. In addition phenomena of internal stress are associated in particular with diamonds grown on silicon and sapphire substrate. The final idea was to understand which were the best ways to grow synthetic diamonds, and to understand the theory behind the phonon confinement. This work lead to 2 conferences, and 1 proceeding.

JANUARY 1995–OCTOBER 1996

◇ M.Sc. Thesis in Physics, at the University of Trento (Italy) under the supervision of prof G. Mariotto and prof. E. Cazzanelli.

The research conducted under my M.Sc. thesis involved the study of the structure and vibrational dynamics of electrochromic materials. These materials present the peculiar property that they can display distinct visible color changes, with the color change commonly being between a transparent bleached state and a colored state. They find relevant application for smart window technology in order to reduce heat loss or overheating in buildings or cars. Very little was known at the time of my work on the dynamic processes undergoing in these materials during color changes therefore the need for a thesis. The experimental techniques used to do this studies were Raman spectroscopy, XRD, photoluminescence, and absorption measurements. During the thesis Ive built a micro-Raman setup used for collecting the measurements and a nitrogen laser coupled with a dye-laser to do selective excitation measurements. The work gave rise to the publication of 5 publications, 1 proceeding and 2 conferences.

RESEARCH KEYWORDS

Optical imaging in the biomedical field (DNA, cancer, neural activity) · CARS spectroscopy · Raman and micro-Raman spectroscopy. · Optical spectroscopy · Optical coherence tomography (OCT) and polarization sensitive

OCT · Multiphoton microscopy · Neural optical imaging · Optoacoustic tomography · Nonlinear effects in optical fibers · Optical switches · Nonlinear and linear PMD · Fiber optics metrology · Distributed measurements of chromatic dispersion in optical fibers · Single photon counting at 1550 nm · Interplay between PMD and nonlinear effects in optical fibers · Porous silicon and porous silicon microcavities · Diamond thin films (phonon confinement theory) · Electrochromic materials.

SCIENTIFIC REVIEWS

Journal referee for the following journals:

Optics Letters, Optics Express, J. Lightwave Technology, Photonics and Technol. Lett., Optics Communications, IEEE Transactions of Instrument. and Meas., Int. J. of Biomedical Imaging, IEEE Transactions on Med. Imaging

AWARDS

- ◇ "Venice Summer School on PMD" Award for **best paper** presented ECOC 2003.
- ◇ Awarded with a travel grant to the Centennial Atlanta Meeting '99, in Atlanta, by the **American Physical Society**. Program funded by the Dept. of Energy and the **National Science Foundation**.
- ◇ Award for **best paper** presented E-MRS'98.
- ◇ Research Grant from the INFM (Italian National Institute for the Physics of Solid State Matter).

GRANTS

- ◇ Winner of a call for proposal major projects (400k €) in order to establish an optical neuroimaging laboratory at the Center for Mind/Brain Sciences (Trento, Italy).
- ◇ Winner of SBIR NIST solicitation in collaboration with Distant Focus, for the development of a combined optical coherence/multiphoton microscope.

MEMBERSHIPS

- ○ Optical Society of America 2000-current
- ○ American Physical Society 1998-current
- ○ IEEE Leos 2002-current

FOREIGN LANGUAGES

- ○ English fluency at mother-tongue level (**Toefl** score above 600)
- ○ German written and spoken at a good level.
- ○ Relative fair knowledge of spoken French.
- ○ Basic knowledge of spoken and written arabic language

INDUSTRIAL COLLABORATIONS

- ○ EXFO Electro-Optical Engineering Inc, Quebec, CANADA
- ○ Distant Focus, Champaign (IL), USA

PUBLICATIONS: BOOKS

1. Porous silicon microcavities.
   C. Vinegoni, M. Cazzanelli and L. Pavesi
   Academic Press, VOL. 2 (2001) PAG. 123–92

PUBLICATIONS: ARTICLES

1. Structure and vibrational dynamics of WO_3 and $(WO_3)_{1-x}(ReO_3)_x$.
   C. Vinegoni
   M.Sc. Thesis (1996).
2. Comparative Raman study of the monoclinic-to- tetragonal phase transition in tungsten trioxide WO_3 at high temperature and upon hydrogen insertion.
   E. Cazzanelli, **C. Vinegoni**, G. Mariotto, A. Kuzmin, and J. Purans.
   Accepted: "J. Solid State Chem." VOL 143 (1999) PAG 24–32
3. Raman and XRD spectroscopic investigations of polymorphism in tungsten trioxide powders.
   E. Cazzanelli, **C. Vinegoni**, G. Mariotto, A. Kuzmin and J. Purans.
   Accepted: "Solid State Ionics" VOL 123 (1999) PAG 67–74
4. XRD, EXAFS and Raman spectroscopy studies of pure ground WO_3 and mixed $W_{1-x}Re_xO_{3-y}$ polycrystals.
   A. Kuzmin, J. Purans, E. Cazzanelli, **C. Vinegoni**, and G. Mariotto
   Accepted: "J. Appl. Physics" VOL. 84 (1998) PAG. 5515–24
5. Luminescence processes in amorphous silicon-nitride nanometric multilayers.
   F. Giorgis, C. F. Pirri, **C. Vinegoni**, and L. Pavesi
   Accepted: "Physical Review B: Rapid Communications" VOL. 60 (1999) PAG. 11572–6
6. Temperature dependence of the photoluminescence of all porous silicon microcavities.
   M. Cazzanelli, **C. Vinegoni**, L. Pavesi
   Accepted: "J. Appl. Phys." VOL. 85 (1999) PAG. 1760–4
7. Luminescence properties of GaN thin films prepared by pulsed laser deposition
   M. Cazzanelli, **C. Vinegon**, J.G. Lunney, K.P. O'Donnel, P.G. Middleton, C. Trager-Cowan, and L. Pavesi
   Accepted: "Mat. Sci. Eng. B." VOL 59 (1999) PAG 137–140
8. Radiative emission properties of a-SiN:H based alloys, nanometric multilayers and light emitting devices.
   F. Giorgis, C.F. Pirri, **C. Vinegoni**, and L. Pavesi
   Accepted: "J. of Luminescence" VOL 80 (1998) PAG 423–427
9. Photoluminescence of localized excitons in pulsed laser deposited GaN
   Massimo Cazzanelli, Duncan Cole, J.F. Donegan, James G. Lunney, Paul G. Middleton, K.P. O'Donnell, **C. Vinegoni**, and Lorenzo Pavesi
   Accepted: "Appl. Phys. Lett." VOL. 73 (1998) PAG. 3390–2
10. Second harmonic generation in ZnSe microcavity
    V. Pellegrini, R. Colombelli, **C. Vinegoni**, S. Rubini, R. Lantier, A. Franciosi, F. Beltram, and L. Pavesi
    Accepted: "Appl. Phys. Lett." VOL. 74 (1999) 1945–7.
11. Morphological and optical characterization of GaN prepared by pulsed laser ablation
    C. Vinegoni, M. Cazzanelli, A. Trivelli, G.J. Lunney, G. Mariotto, and J. Levy
    Accepted: "Surf. Coat. Technol." VOL. 124 (2000) PAG. 272–7
12. Optical and photoluminescence properties of a-Si(1-x)Nx:H films deposited by PECVD.
    C. Pirri, **C. Vinegoni**, and L. Pavesi
    Accepted: "Physical Review B." VOL. 61 NR. 7 (2000) PAG. 4693–8
13. Color centers and polymorphism in pure and WO_3 and mixed ReO_3-WO_3 powders.
    E. Cazzanelli, G. Mariotto, **C. Vinegoni**, A. Kuzmin, and J. Purans.
    Accepted: "Ionics" VOL. 5 PAG. 335–44 (2000)

14. Measurement of nonlinear polarization rotation in high birefringence optical fibers at telecom wavelength.
C. Vinegoni, M. Wegmuller, B. Huttner, and N. Gisin
Accepted: "J. Opt. A: Pure Appl. Opt." Vol. 2 (2000) pp. 314–184

15. All optical switching in a highly birefringent and a standard telecom fiber using a Faraday mirror stabilization scheme.
C. Vinegoni, M. Wegmuller, B. Huttner, and N. Gisin
Accepted: "Opt. Comm." Vol. 182 (2000) pp. 314–18

16. Determination of the nonlinear coefficient n_2/A_{eff} using a self-aligned interferometer and a Faraday mirror.
C. Vinegoni, M. Wegmuller, N. Gisin
Accepted: "Electronic Letters" Vol. 36 (2000) pp. 886–87

17. Distributed gain measurements in Er–doped fibers with high resolution and accuracy using an Optical Frequency Domain Reflectometer.
M. Wegmuller, P. Oberson, O. Guinnard, B. Huttner, L. Guinnard, **C. Vinegoni**, N. Gisin
Accepted: "J. Lightwave Technol." Vol. 18 (2000) pp. 2127–32

18. Analysis of the polarization evolution in a ribbon cable using high resolution OFDR.
M. Wegmuller, M. Legre, P. Oberson, O. Guinnard, L. Guinnard, **C. Vinegoni**, N. Gisin
Accepted: "Photonics and Technology Letters" Vol. 13 (2000) pp. 145–7

19. Measurements of the nonlinear coefficient of standard SMF, DSF, and DSC fibers using a self-aligned interferometer and a Faraday mirror.
C. Vinegoni, M. Wegmuller, and N. Gisin
Accepted: "Photonics and Technol. Lett." Vol. 13 (2001) pp. 1337–9

20. Emulator of First– and Second–order Polarization Mode Dispersion.
M. Wegmuller, S. Demma, **C. Vinegoni**, and N. Gisin
Accepted: "Photonics and Technol. Lett." Vol. 14 (2002) pp. 630–2

21. Distributed Measurements of Chromatic Dispersione and Nonlinear Coefficient in Low PMD Dispersion Shifted Fibers.
C. Vinegoni, H. Chen, M. Leblanc, G. Schinn, M. Wegmulller, and N. Gisin
Accepted: "Photonics and Technol. Lett." Vol. 15 (2003) pp. 739–40

22. Nonlinear effect in optical fibers.
"Ph.D. Thesis" **C. Vinegoni**, Advisor: Prof. N. Gisin
University of Geneva, December 2001

23. Statistics of PMD in recirculating loops.
M. Petersson, **C. Vinegoni**, H. Sunnerud, M. Karlsson
Accepted: "Photonics and Technol. Lett." Vol. 15 (2003) pp. 1543–5.

24. Statistics of polarization-dependent loss in a recirculating loop.
C. Vinegoni, M. Karlsson, M. Petersson, H. Sunnerud
Accepted: "Journal Lightwave Technology", special issue on PMD, Vol.22, (2004) pp. 968–76.

25. Nonlinear Optical Contrast Enhancement in Optical Coherence Tomography.
C. Vinegoni, J.S. Bredfeldt, D.L. Marks, and S.A. Boppart
Accepted: "Optics Express," Vol. 12 (2004) pp.331–41.

26. Interferometric differentiation between resonant Coherent Anti-Stokes Raman Scattering and nonresonant four-wave-mixing processes.
Daniel L. Marks, **C. Vinegoni**, Jeremy S. Bredfeldt, Stephen A. Boppart
Accepted: "Appl. Phys. Lett.," Vol. 85 (2004) pp.5787–89

27. Molecular-Sensitive Optical Coherence Tomography.
C. Vinegoni*,J.S. Bredfeldt*, D.L. Marks, and S.A. Boppart
Accepted: "Optics Letters," Vol. 30 (2005) pp.495–97.

28. Spectroscopic spectral-domain optical coherence microscopy.
Chengyang Xu,**Claudio Vinegoni**, Tyler S. Ralston, Wei Luo, Wei Tan, Stephen A. Boppart
Accepted: "Opt. Lett.," Vol. 31 (2006) pp.1079–81.

29. Integrated structural and functional imaging combining spectral-domain optical coherence and multi-photon microscopy.
Claudio Vinegoni, Tyler Ralston, Wei Tan, Wei Luo, Daniel L. Marks, Stephen A. Boppart
Accepted: "Appl. Phys. Lett.," Vol. 88, (2006) 051105

30. Nonlinear Interferometric Vibrational Imaging: Efficient Detection of Coherent Anti-Stokes Raman Scattering
D. Marks, **Claudio Vinegoni**, J. Bredfeldt, and S.A. Boppart
OPN Special Issue, "Optics in 2005", Vol.16, (2005) pp. 23.

31. High-spectral-resolution coherent anti-Stokes Raman scattering with interferometrically detected broadband chirped pulses
Gareth Jones, Daniel L. Marks, **Claudio Vinegoni**, and Stephen A. Boppart
Accepted: "Opt. Lett.," Vol. 31, (2006) pp. 1543–45

32. Imaging Cellular Responses to Mechanical Stimuli within 3D Tissue.
W. Tan, **C. Vinegoni**, and SA Boppart
Accepted: "Microscopy Research and Technique" Vol. 70, (2007) pp. 361–71

33. Multispectral photoacoustic imaging of fluorochromes in small animals.
D. Razansky, **C. Vinegoni**, V. Ntziachristos
Accepted: "Opt. Lett." Vol. 32, (2007) pp. 2891–3

34. In-vivo imaging of developing Drosophila tissues using Mesoscopic Fluorescence Tomography
C. Vinegoni, C. Pitsouli, D. Razansky, N. Perrimon, V. Ntziachristos
Accepted: "Nature Methods" Vol. 5, (2008) pp.45-8

35. Real-time Catheter Molecular Sensing of Inflammation in Proteolytically Active Atherosclerosis
F.A. Jaffer, **C. Vinegoni**, M.C. John, A.V. Finn, V. Ntziachristos, P. Libby, R. Weissleder
Accepted: "Circulation" Vol. 118, (2008) pp.1802-09.

36. Real-time assessment of inflammation and treatment response in allergic airway inflammation
V. Retamozo, FK Swirski, P Waterman, H Yuan, JL Figueiredo, AP Newton, R Upadhyay, **C Vinegoni**, R Kohler, J Blois, A Smith, M Nahrendorf, L Josephson, R Weissleder, MJ Pittet
Accepted: "J. of Clinical Investigation" Vol. 118 (2008) pp. 4058-66.

37. Polarization Sensitive Optoacoustic Tomography of Optically Diffuse Tissues.
D. Razansky, **C. Vinegoni**, V. Ntziachristos
Accepted: "Optics letters" Vol. 33 (2008) pp. 2308.

38. Normalized Born ratio for fluorescence optical projection tomography.
C. Vinegoni, D. Razansky, J. Figueiredo, M. Nahrendorf, V. Ntziachristos, R. Weissleder
Accepted: "Optics letters" Vol. 34 (2009) pp. 319.

39. Imaging of Mesoscopic Scale Organisms using Selective-Plane Optoacoustic Tomography.
D. Razansky, **C. Vinegoni**, and V Ntziachristos
Accepted: "Phys. Med. Biol." Vol. 54 (2009) pp. 2769

40. Transillumination fluorescence imaging in mice using biocompatible upconverting nanoparticles.
C. Vinegoni, D. Razansky ,V. Ntziachristos, and R. Weissleder.
Accepted: Opt. Letters Vol. 34 (2009) pp. 2566

41. Multispectral opto-acoustic tomography of deep-seated fluorescent proteins in vivo.
D. Razansky, **C. Vinegoni**, et al.
Accepted: "Nature Photonics" Vol. 3 (2009) pp. 412.

42. Unprecedented in vivo views at the mesoscopic scale.
D. Razansky, **C. Vinegoni**, and V. Ntziachristos
Accepted: "BioOptics World" May/June 2009.

43. High throughput transmission optical projection tomography using low cost graphics processing unit.
C. Vinegoni, L. Fexon, P. Fumene Feruglio, M. Pivovarov, J.L. Figueiredo, M. Nahrendorf, A. Pozzo, A. Sbarbati, and R. Weissleder.
Accepted: "Opt. Express" Vol. 17 (2009) pp. 22320.

44. Diffractionless beam in free space with adiabatic changing refractive index in a single mode tapered slab waveguide.
CC. Tsai, **C. Vinegoni**, and R. Weissleder.
Accepted: "Opt. Express" Vol. 17 (2009) pp. 21723.

45. Hybrid PET-optical imaging using targeted probes.
M. Nahrendorf, E. Keliher, B. Marinelli, P. Waterman, P. Fumene Feruglio, L. Fexon, M. Pivovarov, F.K. Swirski, M. Pittet, **C. Vinegoni**, and R. Weissleder.
Accepted: "PNAS" Vol. 107 (2010) pp. 7910.

46. Imaging of molecular probe activity with Born-normalized fluorescence optical projection tomography.
C. Vinegoni, P. Fumene Feruglio, V. Cortez-Retamozo, D. Razansky, B.D. Medoff, V. Ntziachristos, A. Sbarbati, M. Pittet, and R. Weissleder.
Accepted: "Opt. Lett." Vol. 35 (2010) pp. 1088.

47. Deep tissue optical and optoacoustic molecular imaging technologies for small animal research and drug discovery.
D. Razansky, N. Deliolanis, **C. Vinegoni**, and V. Ntziachristos.
Accepted: "Current Pharmaceutical Biotechnology" (2010).

48. In-vivo two-photon imaging of the honeybee antennal lobe.
A. Haase, E. Rigosi, G. Anfora, G. Vallortigara, R. Antolini, and **C. Vinegoni**.
Accepted: "Biomed. Opt. Express" Vol. 2 (2010) pp. 131.

49. WNT5A/JNK and FGF/MAPK pathways regulate the cellular events shaping the vertebrate limb bud.
J. Gros, JK Hu, **C. Vinegoni**, PF Feruglio, R. Weissleder, and C.J. Tabin.
Accepted: "Current Biol." Vol. 20 (2010) pp. 1993.

50. Intravascular Near-infrared Fluorescence Molecular Imaging of Atherosclerosis: Towards Coronary Arterial Visualization of Biologically High-Risk Plaques.
M.A. Calfon, **C. Vinegoni**, V. Ntziachristos, and F.A. Jaffer.
Accepted: "J. Biomed. Opt." Vol. 15 (2010) pp. 011107.

51. Block matching 3D random noise filtering for absorption optical projection tomography.
P.F. Feruglio, **C. Vinegoni**, J. Gros, A. Sbarbati, R. Weissleder.
Accepted: "Phys. Med. Biol." Vol. 55 (2010) pp. 5401.

52. Intraoperative Near-Infrared Fluorescent Cholangiography in Mouse models of bile duct injury: reply.
J.L. Figueiredo, M. Nahrendorf, **C. Vinegoni**, and R. Weissleder.
Accepted: "World J. Surg." (2010).

PUBLICATIONS: CONFERENCES

1. Changes of structural, optical and vibrational properties of WO_3 powders after milling or mixing with ReO_3.
E. Cazzanelli, **C. Vinegoni**, G. Mariotto, A. Kuzmin, and J. Purans.
Electrochemical Society International meeting, S. Antonio TX, USA, 1996.

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WEBPAGE

A copy of this curriculum vitae, a short resume, and a complete dowloadable bibliography with all the published articles and conference contributions, can be found at the following address:
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