

CURRICULUM VITAE OF AUGUSTO NASCETTI

PERSONAL DATA

First Name: Augusto
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Place and Date of birth: Terni (Italy), November 5th 1971
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EDUCATION

- 1997-2000: **Ph.D. in Electronic Engineering** at University of Rome “La Sapienza” on “*Study of Amorphous Silicon Infrared Detector using Micro-Compensated Material*”, supervisor prof. Fabrizio Palma.
- Mar 1997: Professional qualification as Electronic Engineer (final mark 120/120).
- Jul 1996: Laurea degree in **Electronic Engineering** with the mark 110/110 cum Laude, with the thesis “*Design and realisation of hydrogenated amorphous silicon phototransistors*”, supervisor prof. Fabrizio Palma.
- 1990-1996: Electronic Engineering at University of Rome “La Sapienza”, average mark 28.4/30.
- Jul 1990: High-school leaving certificate “Diploma di Maturità Scientifica” at Liceo Scientifico Statale “G.Galilei” of Terni, final mark 60/60.
- Jul 1985: Leaving certificate “Informatics Course: Theory and Programming” at Accademia Perugina, Scuola di Formazione Professionale, final mark 60/60.

ADVANCED COURSES

- Oct 2001: Advanced Course on “*Design of Mixed Digital/Analog ICs*”, Philips Centre for Technical Training, NATLAB, Eindhoven (NL)
- Sep 2000: Course on “*Project Management*” held by TOP Business AG at Philips Research Labs in Aachen
- Jun 1999: Summer School on “*Low Dimensional Semiconductors for Optoelectronic Devices and Communication Systems*”, University of Aveiro, Aveiro, Portugal.
- Jun 1998: Euroconference on “*Advanced Heterostructure Device for Micro and Optoelectronics IIP*”, Villa Gualino, Torino, Italy.
- Dec 1997: “*Microelectronics and Silicon Technology*”, Scuola Nazionale di Elettronica per Dottorandi, Scuola Superiore G. Reiss Romoli, Coppito (Aq), Italy.
- Jul 1997: Euroconference on “*Advanced Heterostructure Device for Micro and Optoelectronics IP*”, LEMO-UMR CNRS 5530, Grenoble, France.
- Apr 1995: Course on Hewlett Packard MDS (Microwave Design System) for MMIC (Microwave Monolithic Integrated Circuits)

AWARDS AND SCHOLARSHIPS

- 2000: “Ercole de Castro” Scholarship from AEI, the Electronic and Electrical Italian Association.
- 1995-1996: Grant at Dept. of Electronic Engineering University of Rome “La Sapienza”.
(150 hours job as assistant for the courses of “*Elettronica Applicata II*” and “*Tecnologie e Materiali per l’Elettronica*”)
- 1993-1994: Grant at Dept. of Electronic Engineering University of Rome “La Sapienza”.
(150 hours job as assistant for the courses of “*Elettronica Applicata I and II*”)
- 1990: Prize Fondazione “I.L.Malizia”.
(prize for the best high-school leaving examination)
- 1990: 10th classified (on 500) in the final of “Giochi della Chimica”.
- 1989 and 1988: Finalist in Italian “Olimpiadi di Matematica” organised by Scuola Normale Superiore di Pisa.

CURRICULUM VITAE OF AUGUSTO NASCETTI

PROFESSIONAL EXPERIENCES

- Since Jun 2004:* Assistant Professor at Dept. of Electronic Engineering, University of Rome "La Sapienza" and Scientific Responsible of the four year Project on Large Area Hybrid Detectors within the program funded by the Italian Ministry of University and Research "Rientro dei Cervelli 2003" (D.M. 501 del 20/03/2003).
- 2000-2004:* Research Scientist at **Philips Research Laboratories** (Aachen, Germany) in the "Imaging Systems" group. The research activity is focused on detection systems for medical imaging based on ionising radiations.
Technical tasks:
 - *Design of experiments and development of complete measurement set-up systems implementing various measurement techniques*
 - *Design of low noise electronic circuits both analog and mixed signal*
 - *Software design for data and image acquisition and processing*
 - *Study and characterization of photo- and X-ray detectors (theory and model building)*
 - *Development of novel detector architectures*Supervisory and Managerial tasks:
 - *Stand-by Project Leader*
 - *Project documentation*
 - *Supervising and co-ordination of technical personnel*
 - *Mechanical and electronic design survey*
 - *Examination (technical interview) of selected candidates to be recruited as researchers*
- Jun 1998:* Tutor for the topic "Information Technology Systems" in the course "Management Techniques and Corporate Structures" financed by the "Fondo Sociale Europeo", Macerata, Italy.
- Apr 1998:* Teaching Assistant for the course of Electronics for the "Diploma di Laurea" in Informatics Engineering at University of Rome "La Sapienza", Academic Year 1997/98.

SUMMARY OF THE RESEARCH ACTIVITY OF AUGUSTO NASCETTI

Augusto Nascetti is currently working as Assistant Professor at the Dept. of Electronic Engineering of the University of Rome "La Sapienza". He is active in scientific research since 1995. During his activity he covered several topics from **material physics** to **advanced electronic systems** and acquired an extended knowledge in the field of **imaging systems**, where he is co-author of more than ten Philips patent applications.

Highlights of Augusto's scientific activity include so far:

- study and characterisation of photo- and X-ray detectors including theory and model building
- development of novel detector architectures including advanced pixel circuits and alternative readout schemes
- design of low noise electronic circuits both analog and mixed signal
- design of experiments and development of complete measurement set-up systems implementing various measurement techniques
- software design for data and image acquisition and processing

LANGUAGES

Italian mother tongue

English good

German good

1989,1988,1987 and 1986: German summer course in Germany.

PUBLICATIONS OF AUGUSTO NASCETTI

PATENT APPLICATIONS

1. A. Nascetti, M. Overdick, WO2003019659, "Sensor arrangement consisting of light-sensitive and/or x-ray sensitive sensors", Koninklijke Philips Electronics N.V.
2. A. Nascetti, M. Overdick, EP1313307, US20030095628, JP2003198951, "Arrangement with sensor elements", Koninklijke Philips Electronics N.V.
3. A. Nascetti, M. Overdick, EP1312938, US20030095629, JP2003156566, "Radiation sensor element", Koninklijke Philips Electronics N.V.
4. A. Nascetti, M. Overdick, WO2003093869, "X-Ray Examination Apparatus Including A Dosimeter", Koninklijke Philips Electronics N.V.
5. A. Nascetti, M. J. Powell, A. R. Franklin, WO03100459, "X-Ray Detector Array For Both Imaging And Measuring Dose", Koninklijke Philips Electronics N.V.
6. A. Nascetti, M. Overdick, H. Wischmann, WO2004064385, "Array Of Sensor Elements", Koninklijke Philips Electronics N.V.
7. M. Simon, A. Nascetti, WO2004095067 "X-Ray Detector Element", Koninklijke Philips Electronics N.V.
8. H. Wiczorek, A. Nascetti, M. Overdick, WO2004095068 "Detector Element For Spatially Resolved Detection Of Gamma Radiation", Koninklijke Philips Electronics N.V.
9. M. Simon, A. Nascetti, M. Overdick, WO2004110056, "Detector For The Detection Of X-Radiation", Koninklijke Philips Electronics N.V.
10. W. Ruetten, A. Nascetti, M. Overdick, WO2005057659, "X-Ray Detector", Koninklijke Philips Electronics N.V.
11. A. Nascetti, W. Ruetten, WO2005046217, "Circuit For Addressing Electronic Units", Koninklijke Philips Electronics N.V.

INTERNATIONAL JOURNALS

1. G. de Cesare, F. Irrera, F. Palma, A. Nascetti, G. Naletto, P. Nicolosi, "Amorphous silicon thin film as tunable and high sensitive photodetector in UV and far UV spectral range", Nuclear Instruments and Methods in Physics Research A, vol. 387, pp. 243-245 (1997).
2. A. Nascetti, F. Palma, "A new analytical model for the amorphous silicon bulk barrier phototransistor", Solid-State Electronics, vol. 42 (3), pp. 339-348, (1998).
3. D. Caputo, G. de Cesare, A. Nascetti, F. Palma, M. Petri, "Infrared photodetection at room temperature using photocapacitance in amorphous silicon structures", Applied Physics Letters, vol. 72 (10), pp.1229-1231 (1998).
4. D. Caputo, A. Nascetti, F. Palma, "Micro-doped and micro-compensated amorphous silicon films for infrared detection", IEEE Photonics Technology Letters, vol. 10 (8), p. 1147 (1998).
5. D. Caputo, G. de Cesare, A. Nascetti, F. Palma, "Experimental evidence of boron induced charged defects in amorphous silicon materials", Thin Solid Films, vol. 348, pp. 79-83 (1999).
6. D. Caputo, A. Nascetti, F. Palma, "Study of the transient response of microcompensated amorphous silicon detector in the near infrared range", IEEE Trans. on Electron Devices, vol. 46 (6), p. 1140 (1999).
7. B. Stannowski, R. E. I. Schropp, A. Nascetti, "High Energy Barrier for Defect Creation in Thin-Film Transistors based on Hot-Wire amorphous Silicon", Applied Physics Letters, vol. 75 (23), p. 3674 (1999).
8. B. Stannowski, A. M. Brockhoff, A. Nascetti, R. E. I. Schropp, "Metastability of hot-wire amorphous silicon thin-film transistors", Journal of Non Crystalline Solids, vol. 266/269, p. 464 (2000).
9. D. Caputo, A. Nascetti, F. Palma, "Noise model of a-Si:H IR photodetectors", Journal of Non Crystalline Solids, vol. 266/269, p. 1193 (2000).
10. D. Caputo, G. de Cesare, F. Irrera, A. Nascetti, F. Palma, "On the relation between defect density and dopant concentration in amorphous silicon films", Journal of Non Crystalline Solids, vol. 266/269, p. 565 (2000).
11. A. Nascetti, D. Caputo, "Amorphous Silicon Phototransistor As Non Linear Optical Device For High Dynamic Range Imagers", IEEE Trans. on Electron Devices, vol. 49 (3), p. 395 (2002).
12. M. Simon, R. A. Ford, A. R. Franklin, S. P. Grabowski, B. Menser, G. Much, A. Nascetti, M. Overdick, M. J. Powell, D. U. Wiechert, "Analysis of lead oxide (PbO) layers for direct conversion X-ray detection", IEEE Trans. Nucl. Sci., Vol. 52, 5(3), p. 2035 (2005)
13. G. de Cesare, D. Caputo, A. Nascetti, C. Guiducci, B. Riccò, "Hydrogenated amorphous silicon ultraviolet sensor for deoxyribonucleic acid analysis", Appl. Phys. Lett., 88, 083904, (2006)
14. E. Kraft, P. Fischer, M. Karagounis, M. Koch, H. Kruger, I. Peric, N. Wermes, C. Herrmann, A. Nascetti, M. Overdick, W. Rutten, "Counting and integrating readout for direct conversion X-ray imaging concept, realization and first prototype measurements", IEEE Trans. Nucl. Sci. (2006) in press
15. G. de Cesare, D. Caputo, A. Nascetti, "Maximum Power Point Tracker For Portable Photovoltaic Systems With Resistive-Like Load", Solar Energy Journal, vol. 80 (9), (2006)
16. D. Caputo, G. de Cesare, A. Nascetti, R. Negri, "Spectral tuned amorphous silicon p-i-n for DNA detection", Journal of Non Crystalline Solids, vol. 352, pp. 2004-2006 (2006)

PUBLICATIONS OF AUGUSTO NASCETTI

17. D. Caputo, G. de Cesare, A. Nascetti, M. Tucci, "Innovative window layer for amorphous silicon/amorphous silicon carbide UV sensor", *Journal of Non Crystalline Solids*, vol. 352, pp. 1818-1821 (2006)
18. D. Caputo, G. de Cesare, A. Nascetti, "Chromium silicide film on ceramic substrate for pressure measurement", *Thin Solid Films* in press
19. A. Nascetti, D. Caputo, G. de Cesare, M. Tucci, "Improving the stability of amorphous silicon ultraviolet sensors", *Thin Solid Films* in press

INTERNATIONAL CONFERENCES

1. D. Caputo, G. de Cesare, A. Nascetti, F. Palma, "A novel room temperature infrared detector using micro-compensated amorphous silicon", *Mat. Res. Soc. Symp. Proc.*, vol. 507, p. 219 (1998).
2. D. Caputo, G. de Cesare, A. Nascetti, F. Palma, "Investigation of unintentional doping at the p-i interface of homojunction amorphous silicon solar cells", *Proc. of 2nd World Conference on Photovoltaic Solar Energy Conversion*, vol. 1, pp. 972-975 (1998).
3. D. Caputo, G. de Cesare, A. Nascetti, F. Palma, R. De Rosa, M. Tucci, "Interface Defects in c-Si/a-Si:H Heterostructures", *Proc. of 2nd World Conference on Photovoltaic Solar Energy Conversion*, vol. 1, pp. 886-889 (1998).
4. D. Caputo, G. de Cesare, A. Nascetti, F. Palma, M. Tucci, "Near infrared response of amorphous silicon detector grown with microcompensated absorber layer", *Mat. Res. Soc. Symp. Proc.*, vol. 557, p. 839 (1999).
5. D. Caputo, G. de Cesare, A. Nascetti, F. Palma, "Non-linear optical gain in bulk barrier amorphous silicon phototransistor", *Mat. Res. Soc. Symp. Proc.*, vol. 609, A12.3 (2000)
6. D. Caputo, G. de Cesare, A. Nascetti, V. Kellezi, F. Palma, "A junction field effect transistor based on hydrogenated amorphous silicon", *Mat. Res. Soc. Symp. Proc.*, vol. 609, A31.1.1 (2000)
7. D. Caputo, G. de Cesare, F. Lemmi, A. Nascetti, F. Palma, F. Roca, M. Tucci, "Photocapacitance of hydrogenated amorphous silicon phototransistors", *Mat. Research Soc. Symp. Proc.*, vol. 664, A26.3, ISBN 1-55899-600-1, (2001)
8. M. Overdick, R. A. Ford, A. R. Franklin, A. Nascetti, M. J. Powell, W. Rütten, M. Simon, "Flat Detector with Integrated Dose Sensing", *Proc. of SPIE Medical Imaging*, vol. 5030, p. 246 (2003)
9. M. Simon, R. A. Ford, A. R. Franklin, S. P. Grabowski, B. Menser, G. Much, A. Nascetti, M. Overdick, M. J. Powell, D. U. Wiechert, "PbO as direct conversion X-ray detector material", *Proc. of SPIE Medical Imaging*, vol. 5368, p. 188 (2004)
10. M. Simon, R. A. Ford, A. R. Franklin, S. P. Grabowski, B. Menser, G. Much, A. Nascetti, M. Overdick, M. J. Powell, D. U. Wiechert, "Analysis of lead oxide (PbO) layers for direct conversion X-ray detection", *Nuclear Science Symposium Conference Record, 2004 IEEE*, Vol. 7, 16-22 Oct. 2004 Page(s):4268 - 4272 (2004)
11. G. de Cesare, D. Caputo, A. Nascetti, M. Tucci, "MPPT Circuit For PV System For Low Power Portable Applications", *Proc. of the 19th E. C. Photovoltaic Solar Energy Conference*, p. 2274, ISBN 3-936338-14-0, (2004)
12. D. Caputo, G. de Cesare, A. Nascetti, L. Serenelli, S. De Iulii, M. Izzi, G. Arabito, M. Tucci, "Electrical and optical characterization of passivation layers under UV light soaking for concentrated photovoltaic applications" *Proceedings of the 20th European Photovoltaic Solar Energy Conference*, p. 1232, (2005)
13. B. Menser, R. J. M. Bastiaens, A. Nascetti, M. Overdick, M. Simon, "Linear system models for lag in flat dynamic x-ray detectors", *Proc. of SPIE Medical Imaging*, (2005)
14. E. Kraft, P. Fischer, M. Karagounis, M. Koch, H. Kruger, I. Peric, N. Wermes, C. Herrmann, A. Nascetti, M. Overdick, W. Rütten, "Counting and integrating readout for direct conversion X-ray imaging concept, realization and first prototype measurements", *Nuclear Science Symposium Conference Record, 2005 IEEE*, Volume 5, 23-29 Oct. 2005 Page(s):2761 - 2765 (2005)
15. G. de Cesare, D. Caputo, A. Nascetti, "Thin film stress sensor suitable for different substrates", *Proc. of First International Conference on Sensing Technology*, p. 143 (2005)
16. D. Caputo, G. de Cesare, A. Nascetti, C. Guiducci, B. Riccò, "Label-free DNA analysis using a-Si:H UV sensors", *Proc. of First International Conference on Sensing Technology*, p. 254 (2005)

OTHER CONFERENCES

- A. Nascetti, F. Palma, "Amorphous and Organic Semiconductors Meeting", Imperial College, London, UK (1998)
- A. Nascetti, F. Palma, "Elettroottica '98", Matera, Italy (1998)
- D. Caputo, G. de Cesare, A. Nascetti, F. Palma, A. Ragni, "Amorphous Silicon Infrared Photodetector Working At Room Temperature", *AISEM 1999*, Italy (1999)
- C. Guiducci, C. Stagni, L. Benini, M. Lanzoni, B. Riccò, D. Caputo, G. de Cesare, A. Nascetti, "DNA Detection By Low-Cost Amorphous Silicon UV Sensors", *AISEM 2005*, Italy (2005)
- D. Caputo, G. de Cesare, A. Nascetti, R. Scipinotti, "Detection of labelled DNA based on amorphous silicon devices", *AISEM 2006*, Italy (2006)
- D. Caputo, G. de Cesare, A. Nascetti, "Chromium silicide film for strain gauge applications", *AISEM 2006*, Italy (2006)