

Giuseppe Zollo

Curriculum Vitae

Education

Type	Year	Institution	Notes (Degree, Experience,...)
5 years MSc Degree	1992	University "La Sapienza" of Rome- Faculty of Engineering	Electronic Engineering. MSc Thesis: "Theoretical analysis of the heat transfer in an ion implanted GaAs thin film under Low Power Pulsed Laser Annealing irradiation"; 110/110 e Lode
Experience: I treated from a theoretical point of view the light absorption and the heating of ion implanted GaAs thin films under the irradiation of high power laser pulses. This was aimed to study the temperature distribution in an inhomogeneous medium and to check whether the GaAs sublimation temperature was exceeded during the irradiation or not. Skills acquired: mathematical methods for physics, solution of non linear partial differential equations, scientific computing			
PhD	1996	University "La Sapienza" of Rome- Faculty of Engineering	Applied electromagnetism and electrophysics sciences. PhD Thesis: "Ion Implantation and Low Power Pulsed Laser Annealing in III-V compound semiconductors: study of the micro-structural effects by High Resolution Transmission Electron Microscopy".
Experience: during my PhD I've been studying, from the experimental point of view, the structural and the electrical properties modifications induced on III-V compound semiconductors. I've been studying, mainly by Reflection High Energy Electron Diffraction (RHEED) and High Resolution Transmission Electron Microscopy (HRTEM), both the self-annealing processes occurring during ion irradiation and the structural modifications induced by Low Power Pulsed Laser post-annealing. I've also studied the electrical activation of the implanted specie by van der Pauw and Hall resistance thin film characterization. Skills acquired: HRTEM, RHEED, electrical measurements, thin film electrical characterization, temperature dependence of the dopants activation energy, laser irradiation in controlled atmosphere.			
Pre-doctorate training	1992-1993	University "La Sapienza" of Rome- Faculty of Engineering- Dipartimento di Energetica	Teaching and research assistant at Dipartimento di Energetica-Physics I; member of the Italian Institute of Matter Physics (INFM);

Experience: From the research point of view I've extended the theoretical model developed during my MSc thesis to other implanted thin films of both elemental (Si-Ge) and compound (GaAs-InP) semiconductors. I've been involved in the experimental electrical characterization of implanted and laser annealed thin films
Skills acquired: electrical measurements, mathematical methods for physics, scientific computing

Appointments

Academic Appointments.

Start	End	Institution	Position
1998	2001	University "La Sapienza" of Rome-Dipartimento di Energetica	Research fellow
		Research Interests: In this period I've been involved in experimental studies concerning the modification of the structural and electronic properties of semiconductors by energetic beams as a follow-up of my PhD research. Thus I performed laser irradiation experiments in controlled atmosphere and structural characterization, by means of RHEED and both conventional transmission electron microscopy and HRTEM. I've been also working with electrical and electronic characterization: sheet resistivity, van der Pauw measurements, Hall effect, deep traps activation energy measurements and Current Transient Spectroscopy. The materials studied were basically both elemental and compound semiconductors of the III-V and the II-VI families, namely Si, GaAs, InP, CdSe.	
2000	2000	Alvar Aalto University (formerly Helsinki University of Technology)-Center of Excellence Computational Physics group	Visiting scientist
		Experience: I've started to work in the field of the first principles total energy calculations based on the Density Functional Theory (DFT) in order to explain some experimental results from HRTEM in implanted and laser annealed GaAs. Then I've started studying from the theoretical and atomistic modelling point of view the self-interstitials defects in GaAs as one of the main irradiation product of the collision cascades.	
		Skills acquired: theory and practical aspects of first principles total energy calculations based on the Density Functional Theory (DFT)	
2001	present	University "La Sapienza" of Rome-Dipartimento di Energetica and Dipartimento di Scienze di Base e Applicate per l'Ingegneria	Staff research fellow and assistant professor- permanent position

Other Appointments

Start	End	Institution	Position
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1992	1993	Liceo Scientifico e Classico L. Pirandello	High school teacher of physics
1993	1998	ENEA: Italian National Agency for New Technologies, Energy and Sustainable Economic Development	Research fellow: permanent position
Experience: I've been dealing in Laser Physics, Surface Science, Solid State Physics: firstly I've been part of a team involved in a project plan for research, development and transfer to the industry of the infrared laser technology for welding and cutting; secondly I've been member of a research team involved in the study of the surface properties of composites for fuel cells applications by surface science techniques (XPS; Auger)*. *From 1994 to 1996 I've been on temporary study leave for my PhD.			
Skills acquired: mainly experimental skills and experience in XPS measurements; knowledge on the CO2 infrared laser technology			

Teaching experience

Year	Institution	Lecture/Course
1993	Liceo Classico e Scientifico L. Pirandello - Rome	Physics
1994/95	Istituto Tecnico Industriale J. C. Maxwell	Electronics: technology and industrial applications
1995/96	University "La Sapienza" of Rome	Physics I for the BSc course of Environment and Territory Engineering – Latina (60 hrs)
1999/2000	University "La Sapienza" of Rome	Physics II for the BSc course of Information Technology Engineering – Roma (60 hrs)
2000/01	University "La Sapienza" of Rome	Physics I for the course of Civil Engineering – Roma (60 hrs-6cfu)
2001/02	University "La Sapienza" of Rome	Physics for the course of Management Engineering – Roma (10 cfu)
2002/03	University "La Sapienza" of Rome	Physics for the course of Management Engineering – Roma (10 cfu)
2003/04	University "La Sapienza" of Rome	Physics for the course of Management Engineering – Roma (10 cfu); Laboratory of Physics for the course of Mechanical Engineering – Roma (6 cfu)
2004/05	University "La Sapienza" of Rome	Physics I for the course of Mechanical Engineering – Roma (6 cfu) Modern Physics II (Solid State Physics) for the MSc course of Sciences for Engineering
2005/06	University "La Sapienza" of Rome	Physics I for the course of Mechanical Engineering – Roma (6 cfu); Modern Physics II (Solid State Physics) for the MSc course of Sciences for Engineering
2006/07	University "La Sapienza" of Rome	Physics I for the course of Mechanical Engineering – Roma (6 cfu);

		Modern Physics II (Solid State Physics) for the MSc course of Sciences for Engineering;
		Laboratory of Physics for the course of Mechanical Engineering – Roma (6 cfu)
2007/08	University “La Sapienza” of Rome	Physics I for the course of Mechanical Engineering – Roma (6 cfu);
		Laboratory of Physics for the course of Mechanical Engineering – Roma (6 cfu)
2008/09	University “La Sapienza” of Rome	Physics II for the course of Mechanical Engineering – Roma (9 cfu);
		“Models and Techniques of Atomistic Simulation” for the course of Nanotechnology Engineering – Roma (6 cfu)
2009/10	University “La Sapienza” of Rome	Physics II for the course of Mechanical Engineering – Roma (9 cfu);
		“Models and Techniques of Atomistic Simulation” for the course of Nanotechnology Engineering – Roma (6 cfu)
2010/11	University “La Sapienza” of Rome	“Models and Techniques of Atomistic Simulation” for the course of Nanotechnology Engineering – Roma (6 cfu)
2011/12	University “La Sapienza” of Rome	Physics II for the course of Electrical Engineering – Roma (9 cfu);
		“Models and Techniques of Atomistic Simulation” for the course of Nanotechnology Engineering – Roma (6 cfu)
2012/13	University “La Sapienza” of Rome	“Models and Techniques of Atomistic Simulation” for the course of Nanotechnology Engineering – Roma (6 cfu)
2013/14	University “La Sapienza” of Rome	“Models and Techniques of Atomistic Simulation” for the course of Nanotechnology Engineering – Roma (6 cfu)
		“Laboratory of Atomistic simulation and fluidodynamics” (Atomistic Simulation)- for the course of Nanotechnology Engineering – Roma (3 cfu)
2014/15	University “La Sapienza” of Rome	“Models and Techniques of Atomistic Simulation” for the course of Nanotechnology Engineering – Roma (6 cfu);
		“Laboratory of Atomistic simulation and fluidodynamics” (Atomistic Simulation)- for the course of Nanotechnology Engineering – Roma (3 cfu) (in English)
2015/16	University “La Sapienza” of Rome	“Models and Techniques of Atomistic Simulation” for the course of Nanotechnology Engineering – Roma (6 cfu);
		“Laboratory of Atomistic simulation and fluidodynamics” (Atomistic Simulation)- for

2016/17	University “La Sapienza” of Rome	the course of Nanotechnology Engineering – Roma (3 cfu) (in English)
		“Models and Techniques of Atomistic Simulation” for the course of Nanotechnology Engineering – Roma (6 cfu);
		Atomistic Simulations: Montecarlo Techniques and Molecular Dynamics for the course of Nanotechnology Engineering – Roma (6 cfu); (in English)
		“Laboratory of Atomistic simulation and fluidodynamics” (Atomistic Simulation)- for the course of Nanotechnology Engineering – Roma (3 cfu) (in English)
2017/18	University “La Sapienza” of Rome	“Models and Techniques of Atomistic Simulation” for the course of Nanotechnology Engineering – Roma (6 cfu);
		“Laboratory of Atomistic simulation and fluidodynamics” (Atomistic Simulation)- for the course of Nanotechnology Engineering – Roma (3 cfu) (in English)
2018/19	University “La Sapienza” of Rome	“Models and Techniques of Atomistic Simulation” for the course of Nanotechnology Engineering – Roma (6 cfu);
		Atomistic Simulations: Montecarlo Techniques and Molecular Dynamics for the course of Nanotechnology Engineering – Roma (6 cfu); (in English)
		“Laboratory of Atomistic simulation and fluidodynamics” (Atomistic Simulation)- for the course of Nanotechnology Engineering – Roma (3 cfu) (in English)

Other titles: advising and organizing activities, memberships, referee appointments, honors, etc.

Advising activities and PhD board memberships

2002÷present	BSc and MSc Dissertation Advisor (>10)
2010	Member of the Academic Board of the PhD course “Electromagnetism” of the University of Rome “La Sapienza
2011	Member of the Academic Board of the PhD course “Electromagnetism and Mathematical Models for Engineering” of the University of Rome “La Sapienza
2012	Member of the Academic Board of the PhD course “Mathematics for Engineering, Electromagnetism and Nanoscience” of the University of Rome “La Sapienza
2013÷2018	Member of the Academic Board of the PhD course “Mathematical Models for Engineering, Electromagnetism and Nanoscience” of the University of Rome “La Sapienza
2011	Member of the Admission Committee of the PhD course “Electromagnetism and

	Mathematical Models for Engineering” of the University of Rome “La Sapienza (XXVII call)
2014, 2016, 2018	Member of the Admission Committees of the PhD course “Mathematical Models for Engineering, Electromagnetism and Nanoscience” of the University of Rome “La Sapienza (XXVII, XXX, XXXII calls)
2017	Chair for the Italian counterpart of the Italian-Canadian Committee for the final exam of the Italian-Canadian joint PhD program
2010÷present	Scientific Advisor of four PhD students

Institutional organizing and managing activities

2001÷2008	Coordinator of the activities at the Dipartimento di Energetica to develop a web platform and support the physics teaching also with multi-media tools.
2003	Elected member of the Selection Committee for the position of Research Fellow in physics at the University “Politecnico di Bari”
2003÷2006	Elected member of the Faculty Academic Committee for the hiring of research fellows and professors at the Faculty of Engineering (Commissione COPDO);
2003÷2007	Elected member of the council (Giunta) of the Dipartimento di Energetica, University “La Sapienza”
2017÷present	Member of the Committee for “Internationalization” of the Nanotechnology Engineering Academic Board (CINT): the Committee is in charge of selecting the international students for the International MSc Degree in Nanotechnology Engineering; Member of the Committee for “the quality of teaching” of the Nanotechnology Engineering Academic Board (CGAQ): the Committee is in charge of analysing the students careers and data ad to propose to the Academic Board solutions for the problems and improvement actions.

Other scientific activities and memberships

2001	Scientific Responsible of the Marie Curie Individual Fellowship MCFI-2000-01638 Programme “Improving Human Research Potential and the Socio-Economic Knowledge Base
1995-2005	Associate member of the Italian Institute of Matter Physics
2006-present	Member of CNIS: Centro di Ricerca Interdipartimentale sulle Nanotecnologie Applicate all’Ingegneria di Sapienza;
2002	Invited guest scientist at the Institute of Ion Beam Physics and Materials Research at the Forschungszentrum Rossendorf (Germany)
2013	Chair and organizer of the session “Design & Modelling at the Nano-Scale” of the Conference “Nanoforum”, Rome 18-20 September 2013
2016-present	Member of CECAM-IT-SIMUL node (previously CECAM Sapienza Node)
2015	Chair and organizer of the session “Molecular Dynamics and Atomistic Simulations” of the Conference “NanoItaly”, Rome 21-24 September 2015
2019	Chair of the session “Research on Nanotechnology at CNIS-Part 2 (part of the workshop WS.II on Nanotechnology at Sapienza” of the conference Nanoinnovation, Rome, 11-14 June 2019.

2019	Associate Editor of the peer reviewed Journal “Computation”, MDPI. The journal is indexed in the Scopus and ISI-Web databases.
2002÷present	I’ve been serving as Referee for many Scopus and ISI-Web indexed international journals such as APS journals (45 referrals in Physical Review B, Physical Review Letters, Physical Review Applied, Physical Review Materials), ACS journals (Journal of Physical Chemistry C(B), Langmuir), Institute of Physics journal (Journal of Physics: Condensed Matter, Journal of Physics D: Applied Physics, Nanotechnology) and other journals (Journal of Nanotechnology, Journal of Nanoscience and Nanotechnology, Journal of Physics and Chemistry of Solids, Materials Research Express and others). The number of papers reviewed is in the range three÷five papers/year.

Funding Information [grants as PI-principal investigator or I-investigator]

Year	Title	Program	Grant value
1999	Investigator	One year Grant from the University La Sapienza: <i>Monocristalli di Semiconduttori Composti e Azotati ad Alta attivazione Elettrica</i> (Prof. G. Vitali)	15.497,7 Euro
2000	Investigator	One year Grant from the University La Sapienza: <i>Semiconduttori Composti ad Alta attivazione Elettrica</i> (Prof. G. Vitali)	10.329,00 Euro
2001	Investigator	One year grant from the University La Sapienza: <i>Proprietà Strutturali ed Elettroniche di nano-aggregati di interstiziali in semiconduttori III-V</i> (Prof. G. Vitali)	7.746,85 Euro
2001-2002	Scientific Responsible of the Host institution (EU)	Programme “Improving Human Research Potential and the Socio-Economic Knowledge Base: Marie Curie Individual Fellowship MCFI-2000-01638; title: <i>Structural alterations in semiconductors caused by energetic beams</i>	66.156 Euro
2002	Investigator	One year grant from the University La Sapienza: <i>Proprietà Strutturali ed Elettroniche di nano-aggregati di interstiziali in semiconduttori III-V</i> (Prof. G. Vitali)	21.000 Euro
2002	Principal Investigator	One year grant from the Faculty of Engineering: <i>Proprietà elettroniche dei composti III-V-N</i>	2.500 Euro
2003	Principal Investigator	One year grant from the Faculty of Engineering: <i>Proprietà elettroniche dei composti III-V-N</i>	2.500 Euro
2003	Investigator	One Year Grant from the University La	23.950,00 Euro

		Sapienza: <i>Proprietà Strutturali ed Elettroniche di nano-aggregati di interstiziali in semiconduttori III-V</i> (Prof. G. Vitali)	
2004	Principal Investigator	One Year grant from the faculty of Engineering: <i>Proprietà elettroniche di semiconduttori III-V irradiati con fasci energetici</i>	3.500 Euro
2005	Principal Investigator	One Year grant from the faculty of Engineering: <i>Studio di processi di attivazione e cattura di portatori in semiconduttori III-V drogati mediante impiantazione ionica.</i>	3.700 Euro
2006	Principal Investigator	One Year grant from the Faculty of Engineering: <i>Studio della struttura elettronica e dei meccanismi di attivazione elettrica in semiconduttori composti.</i>	3.000 Euro
2004	Investigator	One year grant financed by the University "La Sapienza of Rome": <i>Modellistica e Simulazione mediante algoritmi scalabili di idrodinamica radiativa di plasmi densi e di difetti in semiconduttori.</i> (PI: Prof. Stefano Atzeni)	10.000 Euro
2005	Investigator	Two years grant financed by the University "La Sapienza of Rome": <i>Simulazione, tramite algoritmi scalabili, di plasmi per fusion inerziale indotti da laser e di difetti in semiconduttori.</i> (PI: Prof. Stefano Atzeni)	18.300 Euro
2006	Investigator	Two years grant financed by the University "La Sapienza of Rome": <i>Simulazione, tramite algoritmi scalabili, di plasmi per fusion inerziale indotti da laser e di difetti in semiconduttori.</i> (PI: Prof. Stefano Atzeni)	21.300 Euro
2005÷2006	Investigator	PRIN2004: <i>Tecniche e metodologie di caratterizzazione di nanomateriali a base carbonio</i> (PI: Prof. Maria Letizia Terranova)	210.000 Euro
2007	Principal Investigator	One year grant financed by the University "La Sapienza of Rome": <i>Studio di materiali e difetti nano-strutturati e di plasmi per fusion inerziale mediante algoritmi scalabili ad alte prestazioni</i>	17.500,00 Euro
2008	Principal Investigator	One year grant financed by the University "La Sapienza of Rome":	14.000,00 Euro

		<i>Modellistica fisica e computazionale di difetti e nano-strutture in materiali innovative e di plasmi per fusione inerziale</i>	
2010-2012	Investigator	PRIN2008: <i>Metodologie di caratterizzazione e simulazione di materiali nanostrutturati per fotocatodi e dispositivi ad emission di campo</i> (PI: Prof. Luigi Palumbo)	134.000 Euro
2012	Investigator	One year grant financed by the University "La Sapienza of Rome": <i>Nanodiamond for selective and highly sensitive biosensors</i> (PI: Prof. Marco Rossi)	60.000 Euro
2013	Principal Investigator	One year grant financed by the University "La Sapienza of Rome": <i>Surface functionalization of carbon nano-structures</i>	8.000 Euro
2013	Member of the proponent staff	University "La Sapienza" grant for the acquisition of medium/large scientific apparatus: <i>Calcolatore parallel per calcolo scientifico</i> . (PI: Prof. Carlo Casciola)	120.000 Euro
2014	Investigator	One year grant financed by the University "La Sapienza of Rome": <i>Design and Study of nanocarbon surfaces for innovative applications</i> ; (PI: Prof Marco Rossi)	7.000 Euro
2014	Member of the proponent staff	University "La Sapienza" grant for the acquisition of medium/large scientific apparatus: <i>Attrezzatura criogenica per caratterizzazioni chimico-fisiche a basse temperature</i> . (PI: Prof. Marta Feroci)	40.000 Euro
2015	Member of proponent staff	University "La Sapienza" grant for the acquisition of medium/large scientific apparatus: <i>Un sistema multifunzionale SAXS/GISAXS/WAX (Small/Grazing Incidence Small/Wide Angle X-Ray Scattering per la caratterizzazione strutturale di sistemi solidi e in soluzione su scala meso e nanoscopica</i> . (PI: Prof. Nicolae Viorel Pavel)	590.000 Euro
2017	Principal Investigator	One year grant financed by the University "La Sapienza of Rome": <i>Approaching protein sequencing by nano-gap current measurements in graphene nano-ribbons devices: proof of concept by non equilibrium Green function and first principles atomistic</i>	3.500 Euro

2017	Member of the proponent staff	modeling. University “La Sapienza” grant for the acquisition of medium/large scientific apparatus: <i>Piattaforma Computazionale per il Calcolo ad Elevate Prestazioni</i>	63.570,87 Euro
2018	Investigator	H2020 grant financed by the University “La Sapienza of Rome”: <i>Strain characterization via Tip- enhanced Raman spectroscopy in micro- and nano- Electronic Strain engineered Systems and devices (STRESS)</i> . (P.I. Prof. Marco Rossi)	26.000 Euro

Research Activities

Keywords	Brief Description
Atomistic Modelling	During all my research activity I've been involved in both experimental and theoretical/modelling solid state physics, chemical-physics and nanoscience. In the first period of my career I've been mainly interested in experimental studies concerning the modification of the structural and electronic properties of semiconductors by energetic beams, namely ion and high power laser beams. In this context I've performed laser irradiation experiments in controlled atmosphere, structural characterization by means of electron diffraction (RHEED) and both conventional (TEM) and high resolution transmission electron microscopy (HRTEM), and electrical and electronic characterization (mainly sheet resistivity, van der Pauw measurements, Hall effect, deep traps activation energy measurements and Current Transient Spectroscopy). The materials studied were basically both elemental and compound semiconductors of the III-V and the II-VI families, namely Si, GaAs, InP, CdSe, and oxide dielectrics. Since 2001 I'm studying defects, materials and nano-structures properties in the context of atomistic simulations at various levels of accuracy and theory ranging from classical approaches, such as model potential classical molecular dynamics and Monte-Carlo simulations, semi-empirical quantum mechanical theory (tight binding total energy and molecular dynamics) to fully quantum mechanical ab-initio (or first principles) methods based on the Density Functional Theory. In the course of the years the theoretical/simulation activity has become the prominent one. In this context, the scientific interests were initially focussed on the point defects, either isolated and aggregates, and super-lattices in semiconductors. Later on, i.e. since nearly 8-10 years ago, I started to be interested in hybrid systems, i.e. organic-inorganic systems, surfaces, nano-structures, alloys and organic molecules giving contributes concerning carbon nanotubes, functionalized Si surfaces, water and amino-acids interaction with metal oxides surfaces (TiO₂ and ZnO), organic molecules for solar cells or catalysis and stoichiometry dependence of superconductivity in Nb_{1-β}Sn_β alloys. Concerning TiO₂, I've been studying also the hydration of (110) and (001) surfaces that are claimed of interest for energetic purposes. Presently I'm studying from the computational point of view in the context of Non
First principles total energy calculations	
Defects in semiconductors	
Organic-inorganic systems	
Nanostructures and surfaces for energetics and bio-sensing	
Electron diffraction and microscopy	
Ion beam and laser modifications	
Thin film characterization and properties	

Equilibrium Green Function, in conjunction with the Density Functional Theory, graphene based devices designed to obtain fast and efficient amino-acids recognition and sequencing of the proteins primary structure.

Summary of Scientific Achievements

Product type	Number	Data Base
Papers [international, peer reviewed]	71	ISI-WoS; Scopus, IRIS-MIUR
Other contributions	22	IRIS- MIUR

Total property factor (productivity) $\left[\sum_i^{papers} \frac{1}{authors_i} \right]$	20.91
Average property factor per paper	0.29
10 years Average Productivity (10 years Productivity/10)	1.14 (34 papers)
5 years Average Productivity (5 years Productivity/5)	1.34 (22 papers)

Total Impact factor historicised (TIF)	161.45
Average IF (TIF/papers)	2.34
Total Impact factor per author $\left[\sum_i^{papers} \frac{IF_i}{authors_i} \right]$	46.94
%Total Impact factor per author $\left[\sum_i^{papers} \frac{IF_i}{authors_i} \right] / TIF$	0.29
Average IF per author $\left[\sum_i^{papers} \frac{IF_i}{authors_i} / papers \right]$	0.68

Total Citations	621
Average citations per paper	9
Author Citations $\left[cit_a = \sum_i^{papers} \frac{cit_i}{authors_i} \right]$	127,16
Average author citations $\left[cit_a / papers \right]$	1.84
Hirsch (H) index	12
Author normalized H_index $Hi_a : = \left\lfloor \frac{cit_i}{authors_i} \right\rfloor$ (closest integer)	5

Complete list of publications

<i>Peer Reviewed Articles</i>

- 1) G. Zollo, L. Palumbo, M. Rossi, G. Vitali, "Temperature Behavior of Implanted and Pulsed Laser Irradiated GaAs", *Appl. Phys. A* 56 (1993) 409, Springer-Verlag GmbH - ISSN: 0947-8396;
- 2) G. Vitali, C. Pizzuto, M. Rossi, G. Zollo, D. Karpuzov, M. Kalitzova, "Laser Induced Reduction of Carrier activation energy in Zn-implanted GaAs", *Jpn. J. Appl. Phys.* 33 (1994) 2762, Part1, N° 5A, May 1994, Institute of Pure and Applied Physics- ISSN:0021-4922;
- 3) G. Vitali, G. Consalvi, M. Rossi, C. Pizzuto, G. Zollo, M. Kalitzova, "Random and Channeled Ion-damage Distribution in Zn+ implanted GaAs by Electron Microscopy", *Rad. Eff. and Defects in Solids*, 132 (1994) 19, Taylor & Francis Publisher (precedentemente Gordon and Breach Science Publisher S.A.)- ISSN: 1042-0150;
- 4) G. Vitali, M. Rossi, G. Zollo, C. Pizzuto, N. Pashov, M. Kalitzova, "Lattice electron microscopy and image processing of ion-implanted and laser annealed GaAs structures", *Microsc. Microan. and Microstruct.*, 6 (1995) 483, EDP Sciences Publisher- ISSN: 1154-2799;
- 5) G. Vitali, M. Rossi, C. Pizzuto, G. Zollo and M. Kalitzova, "Low Power Pulsed Laser Annealing of Zn+ implanted InP: first endeavours", *Mater. Sci. & Eng. B*, 38 (1996) 72, Elsevier Science Publisher - ISSN: 0921-5107;
- 6) G. Vitali, L. Palumbo, M. Rossi, G. Zollo, C. Pizzuto, L. Di Gaspare and F. Evangelisti, "Solid Phase Epitaxy Induced by Low-Power Pulsed-Laser Annealing of III-V Compound Semiconductors", *Phys. Rev. B* 15 (1996) 4757, The American Physical Society Publisher -ISSN: 0163-1829;
- 7) M. Kalitzova, S. Simov, R. Yankov, Ch. Angelov, G. Vitali, M. Rossi, C. Pizzuto, G. Zollo, J. Fauré, L. Killian and P. Bonhomme, "Amorphization and crystallization in high-dose Zn+ implanted Silicon", *J. Appl. Phys*, 81 (1997) 1143, The American Institute of Physics Publisher- ISSN: 8821-0879;
- 8) G. Vitali, C. Pizzuto, G. Zollo, D. A. Lucca and L. De Luca, "Low-power pulsed-laser annealing of the damaged surface layer of chemomechanically polished CdS, *Jpn. J. Appl. Phys.* 35 (1996) 1558, Institute of Pure and Applied Physics- ISSN:0021-4922;
- 9) G. Vitali, G. Zollo, C. Pizzuto, M. Rossi, D. Manno and M. Kalitzova, "Cross-sectional high resolution electron microscopy of Zn implanted and low-power pulsed-laser annealed GaAs", *Appl. Phys. Lett.* 26 (1996) 4072, The American Institute of Physics- ISSN: 0003-6951;
- 10) Ts. Marinova, A. Kakanakova-Georgieva, M. Kalitzova, G. Vitali, C. Pizzuto and G. Zollo, "XPS depth profiling of laser-annealed Zn+-implanted GaAs" *Appl. Surf. Sci.* 109/110 (1997) 80, North Holland, Elsevier Science Publisher- ISSN: 0169-4332;
- 11) M. Kalitzova, D. Karpuzov, Ts. Marinova, V. Krastev, G. Vitali, C. Pizzuto and G. Zollo, "InP crystal ion-implantation and Laser annealing: RHEED, XPS and computer simulation studies", *Appl. Surf. Sci.* 117/118 (1997) 1, North Holland, Elsevier Science Publisher- ISSN: 0169-4332;
- 12) C. Pizzuto, G. Zollo, G. Vitali, D. Karpuzov and M. Kalitzova, "Activation of electrical carriers in Zn-implanted InP by low-power pulsed laser annealing", *J. Appl. Phys.* 82 (1997) 5334, The American Institute of Physics Publisher- ISSN: 8821-0879;
- 13) G. Vitali, C. Pizzuto, G. Zollo, "Effects of Low-Power Pulsed-Laser Annealing on Electrical Properties of Zn-Implanted InP", *Solid State Comm.* 106 (1998) 421, Pergamon Press, Elsevier Science Publisher, ISSN: 0038-1098;
- 14) G. Vitali, C. Pizzuto, G. Zollo, D. Karpuzov, M. Kalitzova, P. van der Heide, G. Scamarcio, V. Spagnolo, L. Chiavarone, D. Manno, "Structural Reordering and Electrical Activation of Ion-Implanted GaAs and InP due to Laser Annealing in a Controlled Atmosphere", *Phys. Rev. B* 59 (1999) 2986, The American Physical Society Publisher -ISSN: 0163-1829;
- 15) C. Pizzuto, G. Zollo, G. Vitali, "Electrical Activation in Zn+ Implanted and Low-Power Pulsed-Laser Annealed InP in Nitrogen Atmosphere", *J. Mat. Sci.: Materials in Electronics* 10 (1999) 407, Springer Science + Business Media B.V. (precedentemente Kluwer Academic Publisher B.V.)- ISSN: 0957-4522;

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