

Part I – General Information

Full Name Antonio Polimeni

Part II – Education

<i>Type</i>	<i>Year</i>	<i>Institution</i>	<i>Degree</i>
University graduation	1993	Sapienza Università di Roma,	110/110 <i>cum laude</i>
PhD in Physics	1997	Sapienza Università di Roma	

Part III – Appointments

<i>Start</i>	<i>End</i>	<i>Institution</i>	<i>Position</i>
Jan 1997	Oct 1999	School of Physics and Astronomy, University of Nottingham (UK)	Research Assistant
Nov 1999	Nov 2010	Sapienza, Università di Roma	Ricercatore Universitario
Dec 2010	present	Sapienza, Università di Roma	Professore Associato
2013 and 2018			Habilitation as Full Professor

Part IV – Teaching experience

<i>Year</i>	<i>Institution</i>	<i>Lecture/Course</i>
1998/1999	<i>School of Physics and Astronomy, Nottingham University, United Kingdom</i>	<i>Tutor (4 students)</i>
1999/2000	<i>Dipartimento di Fisica, Sapienza Università di Roma</i>	Laboratory classes <i>Physical Experimentations II</i> Exercise classes <i>General Physics II</i>
2000/2001	<i>Dipartimento di Fisica, Sapienza Università di Roma</i>	Exercise classes <i>General Physics I</i> Series of lectures for the Doctorate in Physics (<i>Advanced Methods for Condensed Matter Physics</i>)
2001/2002	<i>Dipartimento di Fisica, Sapienza Università di Roma</i>	Exercise classes <i>General Physics II</i> Series of lectures for the Doctorate in Physics (<i>Advanced Methods for Condensed Matter Physics</i>)
2002/2003	<i>Dipartimento di Fisica, Sapienza Università di Roma</i>	Exercise classes <i>Electricity/Magnetism and Electromagnetism</i> courses
2003/2004	<i>Dipartimento di Fisica, Sapienza Università di Roma</i>	Exercise classes <i>Electricity/Magnetism</i> course and Laboratory classes <i>Optics and Electromagnetism</i> course
2004/2005	<i>Dipartimento di Fisica, Sapienza Università di Roma</i>	Laboratory classes <i>Optics and Electromagnetism</i>
2005/2006	<i>Dipartimento di Fisica, Sapienza Università di Roma</i>	<u>Tenure</u> of the <i>Optics and Electromagnetism</i> course
2006/2007	<i>Dipartimento di Fisica, Sapienza Università di Roma</i>	Exercise classes <i>Thermodynamics</i> Laboratory classes <i>Optics and Electromagnetism</i> Series of lectures for the Master course <i>Physics of surfaces and nanostructures</i>
2007/2008	<i>Dipartimento di Fisica, Sapienza Università di Roma</i>	<u>Tenure</u> of the <i>Semiconductor Physics</i> course <u>Tenure</u> of the <i>Optics and Electromagnetism</i> course
2008/2009	<i>Dipartimento di Biologia Ambientale, Sapienza Università di Roma</i>	<u>Tenure</u> of the <i>Physics</i> course
2009/2010	<i>Dipartimento di Fisica, Sapienza Università di Roma</i>	<u>Tenure</u> of the <i>Optics and Laboratory</i> course Series of lectures for the Doctorate in Physics (<i>Advanced Methods for Condensed matter Physics</i>)
2010/2011	<i>Dipartimento di Fisica, Sapienza Università di Roma</i>	<u>Tenure</u> of the <i>Optics and Laboratory</i> course Series of lectures for the Doctorate in Physics (<i>Advanced Methods for Condensed matter Physics</i>)
2011/2012	<i>Dipartimento di Fisica, Sapienza Università di Roma</i>	<u>Tenure</u> of the <i>Optics and Laboratory</i> course Series of lectures for the Doctorate in Physics (<i>Experimental Methods for Determining the Structural and Electronic of Low-Dimensional systems</i>) Series of lectures for the Physics Olympic Games
2012/2013	<i>Dipartimento di Fisica, Sapienza Università di Roma</i>	<u>Tenure</u> of the <i>Optics and Laboratory</i> course

	<i>Dipartimento di Ingegneria dell'Informazione, elettronica e Telecomunicazioni, Sapienza Università di Roma</i>	<u>Tenure</u> of the <i>Advanced Physics (Fisica Superiore)</i> course
2013/2014	<i>Dipartimento di Fisica, Sapienza Università di Roma</i>	<u>Tenure</u> of the <i>Optics and Laboratory</i> course
2014/2015	<i>Dipartimento di Fisica, Sapienza Università di Roma</i>	<u>Tenure</u> of the <i>Optics and Laboratory</i> course
	<i>Dipartimento di Chimica, Sapienza Università di Roma</i>	<u>Tenure</u> of the <i>Physics I and Laboratory</i> course
2015/2016	<i>Dipartimento di Fisica, Sapienza Università di Roma</i>	<u>Tenure</u> of the <i>Optics and Laboratory</i> course
	<i>Dipartimento di Ingegneria dell'Informazione, elettronica e Telecomunicazioni, Sapienza Università di Roma</i>	<u>Tenure</u> of the <i>Quantum and Solid State Physics</i> course
2016/2017	<i>Dipartimento di Fisica, Sapienza Università di Roma</i>	<u>Tenure</u> of the <i>Optics and Laboratory</i> course
	<i>Dipartimento di Ingegneria dell'Informazione, elettronica e Telecomunicazioni, Sapienza Università di Roma</i>	<u>Tenure</u> of the <i>Quantum and Solid State Physics</i> course
2017/2018	<i>Dipartimento di Fisica, Sapienza Università di Roma</i>	<u>Tenure</u> of the <i>Optics and Laboratory</i> course Series of lectures for the Physics Olympic Games
	<i>Dipartimento di Ingegneria dell'Informazione, elettronica e Telecomunicazioni, Sapienza Università di Roma</i>	<u>Tenure</u> of the <i>Quantum and Solid State Physics</i> course
2018/2019	<i>Dipartimento di Fisica, Sapienza Università di Roma</i>	<u>Tenure</u> of the <i>Condensed Matter Physics</i> course <u>Tenure</u> of the <i>Optics and Laboratory</i> course
2019/2020	<i>Dipartimento di Fisica, Sapienza Università di Roma</i>	<u>Tenure</u> of the <i>Condensed Matter Physics</i> course Laboratory assistant of the <i>Optics and Laboratory</i> course
	<i>Dipartimento di Ingegneria Civile e Ambiente e Territorio, Sapienza Università di Roma</i>	Teaching assistant of the course <i>Physics I</i> course
2020/2021	<i>Dipartimento di Fisica, Sapienza Università di Roma</i>	<u>Tenure</u> of the <i>Condensed Matter Physics</i> course <u>Tenure</u> of the <i>Solid State Sensors</i> course Laboratory assistant of the <i>Optics and Laboratory</i> course
2021/2023	<i>Dipartimento di Fisica, Sapienza Università di Roma</i>	<u>Tenure</u> of the <i>Condensed Matter Physics</i> course <u>Tenure</u> of the <i>Solid State Sensors</i> course Laboratory assistant of the <i>Optics and Laboratory</i> course
2000-2020	<i>Dipartimento di Fisica, Sapienza Università di Roma</i>	<i>Tutor</i> of groups of students within the laboratory activity of the course of <i>Laboratory of Matter Physics</i>

Supervisor of **10** Laurea thesis (4-years duration)

Supervisor of **15** Master's thesis

Supervisor of **2** Internship within the Erasmus framework.

Supervisor of **31** Bachelor's thesis (*dissertazioni*)

Supervisor of **13** PhD thesis in Physics (7) and Materials Sciences (6).

The list of the tutees and the PhD Thesis titles are reported below.

Giorgio Baldassarri Höger von Högersthal (Physics XV cycle)

Tuning of the electronic and lattice properties of (InGa)(AsN)/GaAs heterostructures induced by atomic hydrogen irradiation

Matteo Bissiri (Materials Science XVI cycle)

Hydrogen induced changes in the electronic and lattice properties of dilute nitrides

Marco Felici (Materials Science XIX cycle)

Isoelectronic Traps in Semiconductors: Fundamental Properties and Interaction with Atomic Hydrogen

Francesco Masia (Physics XIX cycle)

III-V-N compounds: the role of N in GaAsN and H in InN

Giorgio Pettinari (Materials Science XXI cycle)

Electronic properties and response to hydrogen incorporation in novel semiconductor materials: GaAsN, GaAsBi and InN

Rinaldo Trotta (Materials Science XXI cycle)

Hydrogen-assisted defect engineering in dilute nitride semiconductors

Marta De Luca (Materials Science XXVII cycle)

Optical and magneto-optical studies of III-V semiconductor nanowires

Simone Birindelli (Physics XXVII cycle)

Fabrication, characterization, and applications of novel nanostructures based on dilute nitride semiconductors

Davide Tedeschi (Mathematical Models for Engineering, Electromagnetics and Nanosciences XXX cycle)

Addressing and tailoring the electronic properties of semiconductor nanostructures: nanowires and transition metal dichalcogenides

Mike Saeed Younis (Physics XXXI cycle)

Single-Photon Emitters Based on Selective Hydrogenation of (In)GaAsN

Mayank Shekhar Sharma (Physics XXXI cycle)

Laser writing of nanostructures based on dilute nitrides

Aswathi Kanjampurath Sivan (Physics XXXIII cycle)

Carrier dynamics in semiconductor nanowires

Elena Blundo (Physics XXXV cycle)

Controlling the optoelectronic properties of layered materials under external perturbations (provisory)

Part V – Awards, Honors and Society memberships

<i>Year</i>	<i>Title</i>
2000	“ <u>Umberto Maria Grassano</u> ” Prize of the Italian Physical Society to a young researcher working on Solid State Physics.
2000	First prize for the best oral presentation at the LXXXVI National Conference of the Italian Physical Society (Palermo) (Condensed Matter Physics section).
2002	Appointment of a two year grant “ <u>Young Researcher Project</u> ” by the Italian Ministry of University and Scientific and Technological Research for the study of the band structure of (InGa)(AsN) alloys.
2003	“ <u>Ugo Campisano</u> ” Prize of the National Institute of Matter Physics awarded to young researchers in the field of Materials Science.
2009	“ <u>Premio Tomassoni</u> ” by Sapienza Università di Roma to Sapienza graduate.
2015	Prize for “ <u>Excellence in University Teaching</u> ” by Facoltà di Scienze Matematiche, Fisiche e Naturali, Sapienza Università di Roma
2017	Outstanding referee 2017, <u>Institute of Physics</u> (London, UK).
2017	“ <u>Somiya Award for international collaboration</u> ” for “understanding the fundamental properties of nanowires (semiconductor nanostructures with a filamentary shape) and their exploitation in practical optoelectronic devices, such as lasers, detectors and sensors” (Kyoto, Japan) by the <i>International Union of Materials Research Societies</i> and the <i>Materials Research Society of Japan</i> .
2012	Member of the Engineering and Physical Sciences Research Council (EPSRC) Peer Review College
2016-2021	Member of the Editorial board of Journal of Semiconductors (Institute of Physics, London UK)
2018	Member of the International Advisory Board of Materials Research Express (Institute of Physics, London UK)
2018	Editorial board member of Materials (MDPI, Basel Switzerland)
2021	Outstanding referee of the Physical Review journals (<u>American Physical Society</u>)

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

<i>Year</i>	<i>Title</i>	<i>Program</i>	<i>Grant value (€)</i>
2002	Study of the band structure of (InGa)(AsN) alloys	“ <i>Young Researcher Project</i> ” by the Italian Ministry of University and Scientific and Technological Research (PI)	10 316
2004	Studio della massa efficace e del fattore giromagnetico dei portatori in composti II-VI (III-V) contenenti l'impurezza isoelettronica ossigeno (azoto) e degli effetti di un irraggiamento con idrogeno.	Ateneo 2004 (PI)	25 000
2005	Studio di fattibilita' di nuove strutture nanometriche semiconduttrici e loro caratterizzazione	Ateneo 2005 (PI)	23 750
2005-2006	Study of the physical properties of strategic materials for telecommunications and high efficiency conversion of solar energy	“Programma Vigoni” funds by the Italian Ministry of University and <i>Deutscher Akademischer Austauschdienst</i> (Germany) (PI)	4000
2006	Punti e fili quantici in nitruri diluiti: un nuovo metodo per la loro realizzazione	Ateneo 2006 (PI)	23 000
2009	Semiconduttori inorganici e organici nanostrutturati	Ateneo 2009 (PI)	36 600
2011	SITELiTE-Deterministic coupling between SITE-controlled, dilute nitride-based Light Emitters and tailor-made photonic-crystal structures	<i>Marie Curie Action—Intra-European Fellowship</i> by EU (coordinator)	193 726
2013	Untangling the electronic band structure of InP nanowires by photoluminescence and photoluminescence excitation spectroscopy	Ateneo 2013 (PI)	7700
2014	Improving light emission efficiency in semiconductor nanowires by hydrogen-assisted surface and hetero-interface passivation	Progetti Awards Sapienza (PI)	53 000
2015	Exploring the tunability of electronic and vibrational properties of few-layer transition metal dichalcogenides via light atom incorporation and intercalation	Ateneo 2015 (PI)	12 000
2015	PROMIS, Postgraduate Research on Dilute Metamorphic Nanostructures and Metamaterials in Semiconductor Photonics	Work package <i>leader</i> of an EU project (Innovative Training Network) in Horizon 2020 (I)	516 122
2016	Caratterizzazione ottica di film sottili per dispositivi fotovoltaici a base di CZTS	Ministero dello Sviluppo Economico and ENEA (PI of the Sapienza activities)	35 000

2018	Strain-driven patterning of two-dimensional materials	Progetti Grandi (with external referee) Sapienza Università di Roma (PI)	63 800
2018	SINFONIA (Trattamento sicuro dei dati mediante l'informazione con singoli fotoni a richiesta)	Regione Lazio (L.R. 13/2008 - art. 7 Progetti di Gruppi di Ricerca) (PI)	149 000
2020	A two-day meeting on the progress of two-dimensional materials (2Day)	Finanziamenti per convegni, seminari, workshop Ateneo Sapienza (PI)	4000
2021	EQUAISE (Enabling QUAntum Information by Scalability of Engineered quantum materials) comprising 7 European partners	<i>QuantERA (European Research Area Network ERA-NET) in the field of Quantum Technologies (PI)</i>	1 824 632

As part of the funding information, the successful applications as PI for magnet time at the High Field Magnet Laboratory (HMFL; Grenoble, France and Nijmegen, The Netherlands) and European Magnetic Field Laboratory (EMFL; Nijmegen, The Netherlands) are reported below

2002, *Magnetophotoluminescence spectroscopy of (InGa)(AsN)/GaAs heterostructures*, 40 hrs

2007, *Determination of the electron effective mass in highly degenerate indium nitride*, 45 hrs

2008, *Carrier effective mass and gyromagnetic factor in GaAsBi highly mismatched alloys*, 24 hrs

2009 and 2011, *Magneto-optical studies of novel dilute nitride-based nanostructures*, 40 + 30 hrs

2011 and 2012, *Carrier mass and g-factor determination in wurtzite GaAs*, 35 hrs

2018, *Probing the direct/indirect band gap structure of mechanically deformed WS₂ single layers*, 30 hrs

The total grant value amounts to about 490000 € (equivalent to a cost of 2000 € per hour).

Part VII – Institutional Activities

<i>Start</i>	<i>End</i>	<i>Institution</i>	<i>Position</i>
2008	2019	Dipartimento di Fisica, Sapienza Università di Roma	Coordinator of the Guidance Activities (<i>Orientamento</i>) provided to freshmen and students by the Physics Department. Co-author of the Department booklet devoted to freshmen.
2009	2010	Dipartimento di Fisica, Sapienza Università di Roma	Coordinator of the participation of the Physics Department to the program “Scientist Around Youth” promoted by the European Commission
2011	2012	Dipartimento di Fisica, Sapienza Università di Roma	Member of the Committee for the Autonomy and Innovation of Teaching at the Physics Department of Sapienza Università di Roma.
2013	2015	Dipartimento di Fisica, Sapienza Università di Roma	<u>Member of the Department Council (Giunta).</u>
2013	2015	Facoltà di Scienze Matematiche, Fisiche e Naturali, Sapienza Università di Roma	<u>Member of the Faculty Council (Giunta).</u>
2005	present	Dipartimento di Fisica, Sapienza Università di Roma	Responsible for the management of liquid nitrogen supply for the departmental experimental groups.
2012	present	Sapienza Università di Roma	Member of the Council of the Doctorate in Mathematical Models for Engineering, Electromagnetics and Nanosciences.
2014	present	Dipartimento di Fisica, Sapienza Università di Roma	<u>Member of Maintenance Commission of the Department buildings</u>
2015	2016	National agency for the evaluation of universities and research institutes (ANVUR)	Reviewer ANVUR 2011-2014
2016	2017	Facoltà di Scienze Matematiche, Fisiche e Naturali, Sapienza Università di Roma	Participant to the Lab2go project (outreach activity in secondary schools) by Dipartimento di Fisica and INFN
2019	present	Dipartimento di Fisica, Sapienza Università di Roma	<u>Chair of the “Spazio e ospiti” commission.</u>
2019	2019	Dipartimento di Fisica, Sapienza Università di Roma	Member of the group subjected to the assessment of the didactic activity by ANVUR.
2021	present	National agency for the evaluation of universities and research institutes (ANVUR)	Reviewer ANVUR 2015-2019

2021	present	Istituto Struttura della Materia (ISM) del CNR e Dipartimento di Fisica, Sapienza Università di Roma	Delegate for the Physics Department of the bilateral agreement between the two institutions
2022	2024	Dipartimento di Fisica, Sapienza Università di Roma	<i>Deputy Scientific Coordinator</i> of the Departmental Laboratory SmartLab (Spectro-Microscopy Laboratory)

Exam and selection procedure commissions

2008		Dipartimento di Fisica, Università degli Studi di Firenze	Member of the committee of Doctorate final exam XXI cycle
2009		Sapienza Università di Roma	Member of the committee of entrance exam XXI cycle Doctorate in Materials Science
2011		Sapienza Università di Roma	Member of the committee of entrance exam XXI cycle Doctorate in Physics
2012		Sapienza Università di Roma	Member of the committee of entrance exam for the training school devoted to high school teachers in Physics (Tirocinio Formativo Attivo)
2014		Dipartimento di Fisica, Sapienza Università di Roma	Member of the committee of Doctorate final exam XXVI cycle
2014		Sapienza Università di Roma	Member of the committee of entrance exam for the training school devoted to high school teachers in Physics (Tirocinio Formativo Attivo)
2015		Sapienza Università di Roma	Member of the committee of entrance exam XXXI cycle Doctorate in Physics
2017		Dipartimento di Fisica, Università degli Studi di Roma, Tor Vergata	Member of the committee of Doctorate final exam XXIX cycle
2017		CNR Institute Nanosciences (Pisa)	Member of the exam committee for Researcher position
2019		Dipartimento di Fisica, Università degli Studi di Firenze	Member of the committee of Doctorate final exam XXXI cycle
2019		Universidad de Cádiz (Spain), Department of Materials Science and Metallurgic Engineering and Inorganic Chemistry	Member of the committee of Doctorate final exam Doctor of Philosophy
2020		CNR Institute for Microelectronics and Microsystems	Member of the selection committee for a fellowship
2022		Sapienza Università di Roma	President of the committee of entrance exam XXXVIII cycle Doctorate in Physics

Part VIII – Professional and Organizational Activities

Reviewing activities

Scientific journals: Physical Review Letters, Physical Review B, Physical Review Materials, Physical Review Applied, Nature Materials, Nature Photonics, Nature Communications, npj 2D Materials & Applications, Advanced Materials, Advanced Materials applied materials & interfaces, Advanced Materials Interfaces, ACS Nano, Scientific Reports, Semiconductor Science and Technology, Nanotechnology, Applied Physics Letters, Journal of Applied Physics, Journal of Physics D, Materials Research Express

Funding agencies: European Commission:
Project reviewer FET-Quantum Technologies Flagship
Innovation Expert of Quantum Technologies Flagship
 Academy of Sciences of the Czech Republic
 Engineering and Physical Sciences Research Council (EPSRC, UK)
 Romanian National Council for Scientific Research (Romania)
 Israel Science Foundation (Israel)
 National Science Center (Poland)
 SêrCymru (Welsh Government)
 Deutscher Akademischer Austausch Dienst (DAAD) German Academic Exchange Service (Germany)
 Beacon of Excellence Support Form Scheme (The University of Nottingham, UK)
 Agenzia Regionale per la Tecnologia e l'Innovazione (Regione Puglia, Italy)
 Deutsche Forschungsgemeinschaft (German Research Foundation)

2005 Member of the Campisano Prize committee (Istituto Nazionale di Fisica della Materia)

2008 Member of the organizing committee of the 22nd conference of the Condensed Matter Division of the European Physical Society (2008)

2008 Member of the international advisory committee of the international conference “Recent Advances of Low Dimensional Structures and Devices”

2009-2013 Member of the EU COST Action MP0805 “Novel gain materials and devices based on III-N-V compounds”

2014-present Member of the European Magnetic Field Laboratory User Committee

2015 Member of the organizing committee of the 101st conference of the Italian Physical Society (2015)

2017 Organizer of the International Workshop on “Characterisation of Photonic Materials and Devices”

2020-2021 Member of the Expert Panel for the evaluation of proposals for the National Science Centre (Poland)

2020 Chairperson of the International Workshop “A two-day meeting on the progress of two-dimensional materials (2Day)”

Part IX – Research Activities

The candidate coordinates the group of “Optical Spectroscopy of Nanostructured Materials” at the Physics Department, Sapienza Università di Roma (<https://antoniopolimeni-physics.weebly.com/>). Initially, the activity of the candidate concerned the effects of disorder on the optical properties of semiconductor quantum wells. In the group of “*Quantum Transport and Spectroscopy of Semiconductors*” at the University of Nottingham, he investigated the transport, structural, and magneto-optical properties of quantum dots and their application as active medium in lasers. In Rome, he studied the electronic and optical properties of different semiconductor material systems also under high magnetic fields and hydrostatic pressure. The candidate discovered the hydrogen-induced passivation of nitrogen atoms in dilute nitrides. This enabled the fabrication of novel nanostructures with planar architecture that paved the way to the recent realization of site-controlled single photon sources embedded in photonic structures. A significant part of the candidate’s activity was at high magnetic field facilities, where he studied the magneto-optical properties of III-V nanowires and other systems. Recently, the candidate pioneered the strain engineering of the electronic and mechanical properties of two-dimensional materials by hydrogen irradiation. The highlights of the candidate’s research activity follow.

Topic	Highlights of the research activity [reference list at page 21]
Disorder effects in low-dimensional semiconductors (1992-1996)	Experimental characterization and modeling of the effects of microscopic disorder on the optical properties of semiconductor quantum wells [8,9,11] and pioneering studies on self-assembled quantum dots [12].
Laser applications of quantum dots (1997-1999)	Engineering, realization, characterization, and optimization of lasers based on InGaAs self-assembled quantum dots with top-notch performances [18,31,42,54]. <i>Performed at the School of Physics and Astronomy, University of Nottingham (UK)</i>
Electronic properties of quantum dots (1997-1999)	Investigation of the thermal stability of the optical properties of quantum dots and their implementation in devices [32,41,48,50]. <i>Performed at the School of Physics and Astronomy, University of Nottingham (UK)</i>
Transport properties of quantum dot-containing devices (1997-1999)	Capacitance-voltage and magneto-tunneling spectroscopy applied to n-i-n/p-i-p and resonant tunneling diodes incorporating quantum dots [19,51,52]. <i>Performed at the School of Physics and Astronomy, University of Nottingham (UK)</i>
Electronic properties of dilute nitrides (2001-2013)	Optical studies of dilute nitrides (relevant for telecom and photovoltaic applications) under high magnetic field and hydrostatic pressure and determination of the fundamental transport and spin properties [108,116,120].
Hydrogen in semiconductor materials and nanostructures (2000-present)	Discovery of the N passivation effects in hydrogenated dilute nitrides [62,63,76,156,229] and III-nitrides [163,185], observation of H doping effects in GaAsBi [155] and of H-tunable ferromagnetism in ZnO [188,203], and defect passivation in Si/Ge nanostructures [190].
Nano-photonics (2014-present)	Implementation of H-related effects in dilute nitrides for the realization of single-photon sources and their implementation in photonic structures [112,149,176,200,201,206,214].
Electronic properties of nanowires (2012-present)	Comprehensive study of the crystal-phase, optical and magneto-optical properties of nanowires aimed at the determination of the electronic, transport, and spin properties [172,179,182,183,191,192,197,207,208,219].
Optoelectronic and mechanical properties of two-dimensional materials (2019-present)	Pioneering of a novel method for creating strain-engineered atomically thin two-dimensional materials via the formation of hydrogen bubbles. These latter exhibit high light emission efficiency and exceptional mechanical properties [210,211,216,220,225,227,228].
Materials for photovoltaics (2016-present)	Optical studies of materials for new generation solar cells [187,198,226,230].

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Stays in international laboratories

2005 Philipps-University of Marburg (Germany)

Following stays were granted on an international competitive basis upon scientific proposal review

2001 European Synchrotron Radiation Facility (ESRF), Grenoble (France)

2002 Grenoble High Magnetic Field Laboratory (GHMLF), Grenoble (France)

2009 and 2019 Synchrotron SOLEIL Paris (France)

2008, 2009, 2011, 2012,
2014, 2019 High Field Magnet Laboratory (HMFL), Nijmegen (The Netherlands)

2021 Institute of Experimental Physics, Magnetic field laboratory, Faculty of Physics, University of Warsaw (Poland)

Current scientific international collaborations

- The School of Physics and Astronomy, The University of Nottingham, United Kingdom (Prof. Amalia Patanè).

- Research School of Electrical Energy and Materials Engineering, The Australian National University, Canberra, Australia (Profs. Chennupati Jagadish and Yureui Lu)

- Center for Functional Sensor and Actuator (CFSN), National Institute for Materials Science (NIMS), Japan (Dr. Tanju Yildirim).

- High Field Magnet Laboratory, Nijmegen, The Netherlands (Prof. Peter C. M. Christianen).

- Institute of Experimental Physics, Faculty of Physics, University of Warsaw, Poland (Profs Adam Babinski and Maciej Molas).

- Institute for Theoretical Physics, University of Regensburg, Germany (Prof. Jaroslav Fabian and Dr. Paulo Faria).

- QuantaLab, Department of Electrical & Computer Engineering, University of Florida, Gainesville, USA (Prof. Philip Feng).

Part X – Summary of Scientific Achievements**Total**

<u>Product type</u>	<u>Number</u>
Papers (international)	246 (including invited; sources: Google Scholar, Scopus, WoS)
Papers (invited)	8
Papers (proceedings)	39
Books	5 (book chapters)
Invited talks and seminars	42

Total Citations¹ 6019 (Google Scholar); 4818 (Scopus)

Hirsch (H) index 44 (Google Scholar); 39 (Scopus)

First author: 27

Last author: 25

Corresponding author: 50

¹ Proceedings are excluded.

Part XI– Seminars, invited talks, and full list of publications**Invited talks**

- November 2023... “*Heterostructuring in Mechanically Deformed van der Waals Crystals*”
Symposium on “2Ds Go Hybrid—Properties and Applications of Dimensionally Hybrid Systems” Materials Research Society Fall Meeting (Boston, USA)
- September 2023... “*Magneto- and quantum-optical properties strain-engineered transition metal dichalcogenide domes*”
8th Polish Conference “Graphene and other 2D materials” (Torun, Poland)
- August 2023... “*Heterostructuring in mechanically deformed van der Waals materials*”
Keynote speaker of the 36th European Conference on Surface Science (Lodz, Poland)
- November 2022 “*Strain-induced exciton hybridization in WS₂ monolayers unveiled by Zeeman splitting measurements*”
Workshop on the “Physics of 2D materials” (Warsaw, Poland)
- May 2022 “*Site-controlled single photon sources in 2D crystals by hydrogen-irradiation*”
Webinar by Nanomaterial journal
- June 2019 “*Controlled micro/nano-dome formation in proton-irradiated bulk transition-metal dichalcogenides*”
4th International Conference on Physics of 2D Crystals 2019 (Hangzhou, China)
- December 2018 “*Position-controlled patterning of the electronic and structural properties of bulk transition-metal dichalcogenides by proton-driven micro/nano-dome formation*”
Nanoscience & Nanotechnology 2018 (Frascati, Italy)
- May 2018 “*Proton-driven patterning of bulk transition-metal dichalcogenides*”
International Workshop on Electronic Structure of Superconductors and Novel Materials (Rome, Italy)
- December 2017 “*Proton-driven generation of atomically thin, light emitting domes in transition metal dichalcogenides*”
Psi-k workshop, 2D layered materials for opto-electronics: a theoretical/computational perspective (Rome, Italy)
- September 2017 “*Nano-micro domes produced in bulk transition metal dichalcogenides by proton irradiation*”
NanoInnovation 2017 (Rome, Italy)
- September 2017 “*Transport and spin properties of excitons, electrons, and holes in wurtzite nanowires*”
15th International Conference on Advanced Materials by the Materials Research Society (Kyoto, Japan)
- September 2014 “*Addressing carrier confinement, mass and gyromagnetic factor in semiconductor nanostructures*”
Workshop on Optical Properties of Individual Nanowires and Quantum Dots in High Magnetic Field, (Toulouse, France)
- August 2014 “*Magneto-Optical Properties of Wurtzite-Phase Semiconductor Nanowires*”
8th Nanowire Growth Workshop and Nanowires 2014, (Eindhoven, The Netherlands)
- July 2013... “*H effects in dilute III-N-V alloys: from defect engineering to nanostructuring*”
27th International Conference on Defects in Semiconductors, (Bologna, Italy)
- June 2012 “*Band structure of high-quality wurtzite GaAs in InGaAs-GaAs core-shell nanowires*”
Nano-structures self-assembly 2012, S. Margherita di Pula (Sardinia, Cagliari, Italy)
- July 2011 “*Nanostructures and novel materials investigated by magneto-photoluminescence spectroscopy at HFML (Nijmegen)*”
EuroMagnet meeting, Laboratoire National des Champs Magnétiques Intenses, Toulouse (France)

- July 2010 “*Unusual compositional dependence of the exciton reduced mass in GaAsBi*”
1st International Workshop on Bismuth Containing Semiconductors, University of Michigan (USA)
- February 2010 “*Hydrogen-mediated nanostructuring of dilute nitride semiconductors*”
XVIII Ural International Winter School on the Physics of Semiconductors, Ekaterinburg (Russia)
- June 2009 “*Hydrogen-induced defect engineering in dilute nitrides semiconductors*”
15th Semiconducting and Insulating Materials Conference, Vilnius (Lithuania)
- April 2007 “*Hydrogen-induced nitrogen passivation in dilute nitrides: a novel approach to defect engineering*”
Material Research Society spring Meeting, San Francisco (CA, USA)
- January 2005 “*Carrier localization in (InGa)(AsN) alloys*”
Optoelectronics 2005, San Jose (CA, USA)
- July 2004 “*Probing the electronic properties of dilute nitrides by carrier localization and effective mass measurements*”
General Conference of the Condensed Matter Division, European Physical Society, Prague (Czech Republic)
- July 2003 “*Hydrogen related effects in diluted nitrides*”
XXII International Conference on Defects in Semiconductors
Aarhus (Denmark)
- June 2002 “*Hydrogen as a probe for studying the electronic properties of (InGa)(AsN)/GaAs heterostructures*”
International symposium on “N-containing III-V semiconductors: Fundamentals and Applications” of the European Materials Research Society, E-MRS, Strasbourg (France)
- April 2002 “*Hydrogen as a probe of the nitrogen charge distribution in (InGa)(AsN)/GaAs*”
19th General Conference of the Condensed Matter Division of the European Physical Society, Brighton (United Kingdom)
- February 2002 “*Interplay of Nitrogen and Hydrogen in (InGa)(AsN)/GaAs heterostructures*”
XIV “Ural International Winter School on the Physics of Semiconductors Electronic properties of low-dimensional semi- and superconductor structures”, Ekaterinburg (Russia)

Invited seminars

- June 2022 “*Two-dimensional crystal bubbles as a platform for exploring the elastic, electronic and optical properties of two-dimensional crystals*”
Solid State Seminar series, Faculty of Physics, University of Warsaw
- December 2019 “*Proton-induced mechanical deformations of transition metal dichalcogenides*”
Department of Physics, University of Basel (Switzerland)
- May 2018 “*Hydrogen-driven generation of atomically thin, light emitting domes in transition metal dichalcogenides*”, Dipartimento di Fisica, Università di Roma “Tor Vergata”
- October 2017 “*Nano-micro domes produced in bulk transition metal dichalcogenides by proton irradiation*”, National Research Council, Institute for Microelectronics and microsystems (Rome, Italy).
- September 2017 “*Proton irradiation in bulk transition metal dichalcogenides*”
Electronic Engineering Department, Tor Vergata University (Rome, Italy).
- July 2017 “*Proton irradiation in bulk transition metal dichalcogenides*” and “*Addressing the fundamental electronic properties of wurtzite GaAs nanowires by magneto-optical spectroscopy*” Department of Physics, Regensburg University (Regensburg, Germany)

- January 2014 “*Optical and Magneto-Optical Studies of III-V Semiconductor Nanowires*” Scuola Normale Superiore, Pisa.
- December 2009 “*Polarization control by strain-engineering in GaAsN/GaAsN:H heterostructures*” Laboratory of Analysis and Architecture of Systems (CNRS), Toulouse, France.
- May 2009 “*Spatial nanostructuring of dilute nitrides by hydrogen*” University of Essex, United Kingdom.
- April 2008 “*Defect Engineering in Dilute Nitride Semiconductors*” TASC National Laboratory, Trieste (Italy).
- May 2003 “*Effects of hydrogen on the electronic and lattice properties of (InGa)(AsN)*” Department of Physics and Material Sciences Center, Philipps-University, Marburg (Germany).
- July 1999 “*Carrier hopping in self-assembled quantum dots*” Nippon Telegraph and Telephone (NTT), Tokyo (Japan).
- February 1999 “*Carrier hopping in InAs/Al_yGa_{1-y}As self-organized quantum Dots*” Max-Planck Institute of Microstructure Physics, Halle (Germany).
- February 1998 “*Next generation laser diodes*”, Department of Physics, University of Sheffield (United Kingdom).
- January 1998 “*Optical and Microstructural Studies of Heterostructures and Injection Lasers incorporating (InGa)As Quantum Dots*”, Institut für Festkörperphysik, TU Berlin (Germany).
- October 1996 “*Disorder and localization effects in InGaAs/GaAs quantum heterostructures*” Department of Physics, University of Nottingham, Nottingham (United Kingdom).

Invited papers (chapters) in reviews (books)

Salvatore Cianci, Elena Blundo, Marco Felici, Antonio Polimeni, Giorgio Pettinari
 “*Tailoring the optical properties of 2D transition metal dichalcogenides by strain*”
 submitted to Optical Materials

Cinzia Di Giorgio, Elena Blundo, Giorgio Pettinari, Marco Felici, Fabrizio Bobba, Antonio Polimeni
 “*Mechanical, elastic and adhesive properties of two-dimensional materials*”
 submitted to Advanced Materials Interfaces

E. Blundo, E. Cappelluti, M. Felici, G. Pettinari, A. Polimeni
 “*Strain-tuning of the electronic, optical, and vibrational properties of two-dimensional crystals*”
 Applied Physics Review **8**, 021318 (2021)

D. Tedeschi, M. De Luca, and A. Polimeni
 “*Photoluminescence Spectroscopy Applied to Semiconducting Nanowires: A Valuable Probe for Assessing Lattice Defects, Crystal Structures, and Carriers’ Temperature*”, in
 Fundamental Properties of Semiconductor Nanowires, edited by N. Fukata and R. Rurali, Springer Nature Singapore Pte Ltd. (2020).

M. De Luca and A. Polimeni
 “*Electronic properties of wurtzite-phase InP nanowires determined by optical and magneto-optical spectroscopy*” in
 Applied Physics Review **4**, 041102 (2017)

G. Pettinari, A. Polimeni, and M. Capizzi
 “*Effects of Hydrogenation on the Electronic Properties of Dilute Nitrides*”, in
 Hydrogenated dilute nitride semiconductors: theory, properties, applications, edited by G. Ciatto (Pan Stanford Publishing, Singapore, 2014)

ISBN 978-981-4463-45-4

A. Polimeni, F. Masia, G. Baldassarri Höger von Högersthal, M. Felici and M. Capizzi
 “*Measurement of Carrier Localization Degree, Electron Effective Mass, and Exciton Size in $In_xGa_{1-x}As_{1-y}N_y$ Alloys*”, in
 Semiconductor Research, Experimental Techniques, edited by A. Patanè and N. Balkan (Springer, Berlin, Germany, 2012)

E. P. O’Reilly, A. Lindsay, P. J. Klar, A. Polimeni, ad M. Capizzi
 ”Trends in the electronic structure of dilute nitride alloys” in
 Semiconductor Science and Technology **24**, 033001 (2009)

R. Trotta, A. Polimeni, and M. Capizzi
 ”*Hydrogen-induced defect engineering in dilute nitride semiconductors*”
 Physica Status Solidi C **6** , 2644 (2009)

A. Polimeni, F. Masia, G. Baldassarri Höger von Högersthal, M. Felici and M. Capizzi
 “*Measurement of Carrier Localization Degree, Electron Effective Mass, and Exciton Size in $In_xGa_{1-x}As_{1-y}N_y$ Alloys*”, in
 Dilute Nitrides Semiconductors, edited by M. Henini (Elsevier, Oxford, UK, 2005)

A. Polimeni and M. Capizzi
 “*Role of Hydrogen in Dilute Nitrides*”, in
 Physics and applications of dilute nitrides, edited by I. A. Buyanova and W. M. Chen (Taylor and Francis Editors 2004)

A. Polimeni, F. Masia, G. Baldassarri Höger von Högersthal, and M. Capizzi
 “*Magnetophotoluminescence studies of $In_xGa_{1-x}As_{1-y}N_y$: a measurement of the electron effective mass, exciton size, and degree of carrier localization*”, in
 Journal of Physics: Condensed Matter **16**, S3186 (2004)

A. Polimeni, G. Baldassarri, M. Bissiri, M. Capizzi, A. Frova, M. Fischer, M. Reinhardt, and A. Forchel
 ”*Role of hydrogen in III-N-V compound semiconductors*”, in
 Semiconductors Science and Technology **17**, 797 (2002)

Publications in International refereed journals**2023**

246. Maria Grazia Betti, Dario Marchiani, Andrea Tonelli, Marco Sbroscia, Elena Blundo, Marta De Luca, Antonio Polimeni, Riccardo Frisenda, Carlo Mariani, Samuel Jeong, Yoshikazu Ito, Nicola Cavani, Roberto Biagi, Peter N. O. Gillespie, Michael Hernandez Bertran, Miki Bonacci, Elisa Molinari, Valentina De Renzi, Deborah Prezzi
“*Dielectric Response and Excitations of Hydrogenated Free-standing Graphene*”
Carbon Trends 100274 (2023)
245. Boqing Liu, Tanju Yildirim, Elena Blundo, Domenico de Ceglia, Ahmed Raza Khan, Zongyou Yin, Hieu T Nguyen, Giorgio Pettinari, Marco Felici, Antonio Polimeni, Yuerui Lu
“*Extraordinary second harmonic generation modulated by divergent strain field in pressurized monolayer domes*”
Applied Physics Reviews **10**, 021414 (2023)
244. Salvatore Cianci, Elena Blundo, Federico Tuzi, Giorgio Pettinari, Katarzyna Olkowska-Pucko, Eirini Parmenopoulou, Djero BL Peeters, Antonio Miriametro, Takashi Taniguchi, Kenji Watanabe, Adam Babinski, Maciej R Molas, Marco Felici, Antonio Polimeni
“*Spatially Controlled Single Photon Emitters in hBN-Capped WS₂ Domes*”
Advanced Optical Materials 2202953 (2023)
243. Boqing Liu, Tanju Yildirim, Tieu Lü, Elena Blundo, Li Wang, Lixue Jiang, Hongshuai Zou, Lijun Zhang, Huijun Zhao, Zongyou Yin, Fangbao Tian, Antonio Polimeni, Yuerui Lu
“*Variant Plateau’s law in atomically thin transition metal dichalcogenide dome networks*”
Nature Communications **14**, 1050 (2023)
242. Lorenza Romagnoli, Andrea D’Annibale, Elena Blundo, Atanu Patra, Antonio Polimeni, Daniele Meggiolaro, Iryna Andrusenko, Danilo Marchetti, Mauro Gemmi, Alessandro Latini
“*4,4’-(Anthracene-9,10-diylbis(ethyne-2,1-diyl))bis(1-methyl-1pyridinium)LeadIodide C₃₀H₂₂N₂Pb₂I₆: A Highly Luminescent, Chemically and Thermally Stable One-Dimensional Hybrid Iodoplumbate*”
Chemistry of Materials **35**, 1818 (2023)
241. Arkadeb Pal, Khyati Anand, TW Yen, Atanu Patra, A Das, SM Huang, E Blundo, A Polimeni, HD Yang, Sandip Chatterjee
“*Magnetic properties and coupled spin-phonon behavior in quasi-one-dimensional screw-chain compound BaMn₂V₂O₈*”
Physical Review Materials **7**, 014402 (2023)
240. Katarzyna Olkowska Pucko, Elena Blundo, Natalia Zawadzka, Salvatore Cianci, Diana Vaclavkova, Piotr Kapuściński, Dipankar Jana, Giorgio Pettinari, Marco Felici, Karol Nogajewski, Miroslav Bartoš, Kenji Watanabe, Takashi Taniguchi, Clement Faugeras, Marek Potemski, Adam Babiński, Antonio Polimeni, Maciej R Molas
“*Excitons and trions in WSSe monolayers*”
2D Materials **10**, 015018 (2023)

2022

239. Elena Blundo, Paulo E Faria Junior, Alessandro Surrente, Giorgio Pettinari, Mikhail A Prosnikov, Katarzyna Olkowska-Pucko, Klaus Zollner, Tomasz Woźniak, Andrey Chaves, Tomasz Kazimierzczuk, Marco Felici, Adam Babiński, Maciej R Molas, Peter CM Christianen, Jaroslav Fabian, Antonio Polimeni
“*Strain-Induced Exciton Hybridization in WS₂ Monolayers Unveiled by Zeeman-Splitting Measurements*”
Physical Review Letters **129**, 067402 (2022)
238. Lorenza Romagnoli, Andrea D’Annibale, Elena Blundo, Antonio Polimeni, Alberto Cassetta, Giuseppe Chita, Riccardo Panetta, Andrea Ciccio, Alessandro Latini
“*Synthesis, Structure, and Characterization of 4,4’-(Anthracene-9,10-diylbis(ethyne-2,1-diyl))bis(1-methyl-1-pyridinium) Bismuth Iodide (C₃₀H₂₂N₂)₃Bi₄I₁₈, an Air, Water, and Thermally Stable OD Hybrid Perovskite with High Photoluminescence Efficiency*”
Crystal Growth and Design **22**, 7426 (2022)
237. James Felton, Elena Blundo, Zakhar Kudrynskyi, Sanliang Ling, Jonathan Bradford, Giorgio Pettinari, Timothy Cooper, Matthew Wadge, Zakhar Kovalyuk, Antonio Polimeni, Peter Beton, David Grant, Gavin Walker, Amalia Patanè

“Hydrogen-Induced Conversion of SnS_2 into SnS or Sn : A Route to Create SnS_2/SnS Heterostructures”
Small **18**, 2202661 (2022)

236. Maria Grazia Betti, Elena Blundo, Marta De Luca, Marco Felici, Riccardo Frisenda, Yoshikazu Ito, Samuel Jeong, Dario Marchiani, Carlo Mariani, Antonio Polimeni, Marco Sbroscia, Francesco Trequattrini, Rinaldo Trotta
“Homogeneous Spatial Distribution of Deuterium Chemisorbed on Free-Standing Graphene”
Nanomaterials **12**, 2613 (2022)
235. Maria Grazia Betti, Ernesto Placidi, Chiara Izzo, Elena Blundo, Antonio Polimeni, Marco Sbroscia, José Avila, Pavel Dudin, Kailong Hu, Yoshikazu Ito, Deborah Prezzi, Miki Bonacci, Elisa Molinari, Carlo Mariani
“Gap Opening in Double-Sided Highly Hydrogenated Free-Standing Graphene”
Nano Letters **22**, 2971 (2022)
234. Cinzia Di Giorgio, Elena Blundo, Giorgio Pettinari, Marco Felici, Fabrizio Bobba, Antonio Polimeni
“Mechanical, Elastic, and Adhesive Properties of Two-Dimensional Materials: From Straining Techniques to State-of-the-Art Local Probe Measurements”
Advanced Materials Interfaces **9**, 2102220 (2022)
233. Salvatore Cianci, Elena Blundo, Marco Felici, Antonio Polimeni, Giorgio Pettinari
“Tailoring the optical properties of 2D transition metal dichalcogenides by strain”
Optical Materials **125**, 112087 (2022)
232. Elena Blundo, Alessandro Surrente, Davide Spirito, Giorgio Pettinari, Tanju Yildirim, Carlos Alvarado Chavarin, Leonetta Baldassarre, Marco Felici, Antonio Polimeni
“Vibrational Properties in Highly Strained Hexagonal Boron Nitride Bubbles”
Nano Letters **22**, 1525 (2022)
231. Arkadeb Pal, T. W. Kuo, Chia-Hsiu Hsu, D Chandrasekhar Kakarla, Ajay Tiwari, M. C. Chou, Atanu Patra, P. Yanda, E. Blundo, A. Polimeni, A. Sundaresan, F. C. Chuang, H. D. Yang
“Interplay of lattice, spin, and dipolar properties in CoTeMoO_6 Emergence of Griffiths-like phase, metamagnetic transition, and magnetodielectric effect”
Physical Review B **105**, 024420 (2022)
230. Francesco Filippone, Saeed Younis, Giuseppe Mattioli, Marco Felici, Elena Blundo, Antonio Polimeni, Giorgio Pettinari, Damiano Giubertoni, Eduard Sterzer, Kerstin Volz, Dan Fekete, Eli Kapon, Aldo Amore Bonapasta
“Selective Effects of the Host Matrix in Hydrogenated InGaAsN Alloys: Toward an Integrated Matrix/Defect Engineering Paradigm”
Advanced Functional Materials **32**, 2108862 (2022)
229. Diego Di Girolamo, Elena Blundo, Giulia Folpini, Corinna Ponti, Guixiang Li, Mahmoud H. Aldamasy, Zafar Iqbal, Jorge Pascual, Giuseppe Nasti, Meng Li, Roberto Avolio, Olga Russina, Alessandro Latini, Fahad Alharthi, Marco Felici, Annamaria Petrozza, Antonio Polimeni, Antonio Abate
“Energy Distribution in Tin Halide Perovskite”
Solar RRL **6**, 2100825 (2022)

2021

228. Cinzia Di Giorgio, Elena Blundo, Giorgio Pettinari, Marco Felici, Antonio Polimeni, Fabrizio Bobba
“Exceptional Elasticity of Microscale Constrained MoS_2 Domes”
ACS applied materials & interfaces **13**, 48228 (2021)
227. Elena Blundo, Tanju Yildirim, Giorgio Pettinari, Antonio Polimeni
“Experimental Adhesion Energy in van der Waals Crystals and Heterostructures from Atomically Thin Bubbles”
Physical Review Letters **127**, 046101 (2021)
226. Elena Blundo, Antonio Polimeni, Daniele Meggiolaro, Andrea D’Annibale, Lorenza Romagnoli, Marco Felici, Alessandro Latini
“Brightly Luminescent and Moisture Tolerant Phenyl Viologen Lead Iodide Perovskites for Light Emission Applications”
Journal of Physical Chemistry Letters **12**, 5456 (2021)
225. E. Blundo, E. Cappelluti, M. Felici, G. Pettinari, A. Polimeni
“Strain-tuning of the electronic, optical, and vibrational properties of two-dimensional crystals”
Applied Physics Review **8**, 021318 (2021) *invited paper*

224. Giorgio Pettinari, Gianluca Marotta, Francesco Biccari, Antonio Polimeni, Marco Felici
 “Tailoring the optical properties of dilute nitride semiconductors at the nanometer scale”
 Nanotechnology **32**, 185301 (2021)
223. A. Di Trolio, A. Amore Bonapasta, C. Barone, A. Leo, G. Carapella, S. Pagano, A. Polimeni, and A. M. Testa
 “Transport mechanisms in Co-doped ZnO (ZCO) and H-irradiated ZCO polycrystalline thin films”
 Physical Chemistry Chemical Physics **23**, 2368 (2021)
222. Mahmoud Mohamed Saad Abdelnabi, Chiara Izzo, Elena Blundo, Maria Grazia Betti, Marco Sbroscia, Giulia Di Bella, Gianluca Cavoto, Antonio Polimeni, Isabel García-Cortés, Isabel Rucandio, Alejandro Morono, Kailong Hu, Yoshikazu Ito, Carlo Mariani
 “Deuterium adsorption on free-standing graphene”
 Nanomaterials **11**, 130 (2021)

2020

221. Mahmoud Mohamed Saad Abdelnabi, Elena Blundo, Maria Grazia Betti, Gianluca Cavoto, Ernesto Placidi, Antonio Polimeni, Alessandro Ruocco, Kailong Hu, Yoshikazu Ito, Carlo Mariani
 “Towards Free-Standing Graphene: Atomic Hydrogen and Deuterium Bonding to Nano-Porous Graphene”
 Nanotechnology **32**, 035707 (2020)
220. Cinzia Di Giorgio, Elena Blundo, Giorgio Pettinari, Marco Felici, Yuerui Lu, Anna Maria Cucolo, Antonio Polimeni, Fabrizio Bobba
 “Nanoscale Measurements of Elastic Properties and Hydrostatic Pressure in H₂-Bulged MoS₂ Membranes”
 Advanced Materials Interfaces **7**, 2001024 (2020)
219. Francesco Filippone, Giuseppe Mattioli, Antonio Polimeni, Marco Felici, Aldo Amore Bonapasta
 “Opposite Hydrogen Behaviors in GaAsN and InAsN Alloys: Band Gap Opening Versus Donor Doping”
 Journal of Physical Chemistry C **124**, 19240 (2020)
218. Davide Tedeschi, H Aruni Fonseka, Elena Blundo, Andres Granados del Aguila, Yanan Guo, Hark Hoe Tan, Peter CM Christianen, Chennupati Jagadish, Antonio Polimeni, Marta De Luca
 “Hole and Electron Effective Masses in Single InP Nanowires with a Wurtzite-Zincblende Homo Junction”
 ACS Nano **14**, 11613 (2020)
217. D. Tjeertes, T. J. F. Verstijnen, A. Gonzalo, J. M. Ulloa, M. S. Sharma, M. Felici, A. Polimeni, F. Biccari, M. Gurioli, G. Pettinari, C. Şahin, M. E. Flatté, and P. M. Koenraad
 “N–nH complexes in GaAs studied at the atomic scale by cross-sectional scanning tunneling microscopy”
 Physical Review B **102**, 125304 (2020)
216. Elena Blundo, Cinzia Di Giorgio, Tanju Yildirim, Marco Felici, Yuerui Lu, Fabrizio Bobba, and Antonio Polimeni
 “Engineered creation of periodic giant, non-uniform strains in MoS₂ monolayers”
 Advanced Materials Interfaces **7**, 2000621 (2020)
215. James Felton, Elena Blundo, Sanliang Ling, Joseph Glover, Zakhar R Kudrynskiy, Oleg Makarovskiy, Zakhar D Kovalyuk, Elena Besley, Gavin Walker, Antonio Polimeni, Amalia Patané
 “The Interaction of Hydrogen with the van der Waals Crystal γ -InSe”
 Molecules **25**, 2526 (2020)
214. Marco Felici, Giorgio Pettinari, Francesco Biccari, Alice Boschetti, Saeed Younis, Simone Birindelli, Massimo Gurioli, Anna Vinattieri, Annamaria Gerardino, Luca Businaro, Mark Hopkinson, Silvia Rubini, Mario Capizzi, Antonio Polimeni
 “Broadband enhancement of light-matter interaction in photonic crystal cavities integrating site-controlled quantum dots”
 Physical Review B **101**, 205403 (2020)
213. Lukas Spindlberger, Johannes Aberl, Antonio Polimeni, Jeffrey Schuster, Julian Hörschläger, Tia Truglas, Heiko Groiss, Friedrich Schäffler, Thomas Fromherz, Moritz Brehm
 “In-Situ Annealing and Hydrogen Irradiation of Defect-Enhanced Germanium Quantum Dot Light Sources on Silicon”
 Crystals **10**, 351 (2020)
212. Felisa Berenguer, Giorgio Pettinari, Marco Felici, Nilanthy Balakrishnan, Jesse N Clark, Sylvain Ravy, Amalia Patané, Antonio Polimeni, Gianluca Ciatto
 “Imaging shape and strain in nanoscale engineered semiconductors for photonics by coherent x-ray diffraction”

Communications Materials **1**, 19 (2020)

211. E. Blundo, M. Felici, T. Yildirim, G. Pettinari, D. Tedeschi, A. Miriametro, B. Liu, W. Ma, Y. Lu, A. Polimeni
 “Evidence of the direct-to-indirect band gap transition in strained two-dimensional WS₂, MoS₂, and WSe₂”
 Physical Review Research **2**, (Rapid Communication) 012024 (2020)

2019

210. Davide Tedeschi, Elena Blundo, Marco Felici, Giorgio Pettinari, Boqing Liu, Tanju Yildirim, Elisa Petroni, Chris Zhang, Yi Zhu, Simona Sennato, Yuerui Lu, Antonio Polimeni
 “Controlled micro/nanodome formation in proton-irradiated bulk transition-metal dichalcogenides”
 Advanced Materials **31**, 1970314 (2019)
209. Antonio Di Trolio, Massimiliano Polichetti, Antonio Polimeni, Alberto Maria Testa
 “Local magneto-optical response of H⁺ irradiated Zn_{1-x}Co_xO thin films”
 The European Physical Journal Special Topics **228**, 683 (2019)
208. P. E. Faria Junior, D. Tedeschi, M. De Luca, B. Scharf, P. C. M. Christianen, C. Jagadish, A. Polimeni, J. Fabian,
 “Common nonlinear features and spin-orbit coupling effects in the Zeeman splitting of novel wurtzite materials”
 Physical Review B **99**, 195205 (2019)
207. D. Tedeschi, M. De Luca, P. E. Faria Junior, A. Granados Del Aguila, Q. Gao, H. H. Tan, B. Scharf, P. C. M. Christianen, C. Jagadish, J. Fabian, A. Polimeni
 “Unusual spin properties of InP wurtzite nanowires revealed by Zeeman splitting spectroscopy”
 Physical Review B **99** (Rapid Communication), 161204 (2019)
206. A. Gerardino, G. Pettinari, N. Caselli, S. Vignolini, F. Riboli, F. Biccari, M. Felici, A. Polimeni, A. Fiore, M. Gurioli, F. Intonti
 “Coupled Photonic Crystal Nanocavities as a Tool to Tailor and Control Photon Emission”
 Ceramics **2**, 34 (2019)
205. G. Pettinari, L. Labbate, M. S. Sharma, S. Rubini, A. Polimeni, M. Felici
 “Plasmon-assisted bandgap engineering in dilute nitrides”
 Nanophotonics, **8**, 1465 (2019)
204. E Giulotto, M Geddo, M Patrini, G Guizzetti, MS Sharma, M Capizzi, A Polimeni, G Pettinari, S Rubini, M Felici
 “Strain related relaxation of the GaAs-like Raman mode selection rules in hydrogenated GaAs_{1-x}N_x layers”
 Journal of Applied Physics **125**, 175701 (2019)
203. G. Varvaro, A. Di Trolio, A. Polimeni, A. Gabbani, F. Pineider, C de Julián Fernández, G. Barucca, P. Mengucci, A. Amore Bonapasta, A. M. Testa
 “Giant magneto-optical response in H⁺ irradiated semiconductor sciencerated Zn_{1-x}Co_xO thin films”
 Journal of Materials Chemistry C **7**, 78 (2019)

2018

202. G. Ciatto, G Pettinari, A Polimeni
 “Gallium clustering and structural effects of hydrogenation in InGaN/GaN nanostructures”
 Journal of Applied Physics **124**, 165709 (2018)
201. G. Pettinari, M Felici, F Biccari, M Capizzi, A Polimeni
 “Site-Controlled Quantum Emitters in Dilute Nitrides and their Integration in Photonic Crystal Cavities”
 Photonics **5**, 10 (2018)
200. Francesco Biccari, Alice Boschetti, Giorgio Pettinari, Federico La China, Massimo Gurioli, Francesca Intonti, Anna Vinattieri, MayankShekhar Sharma, Mario Capizzi, Annamaria Gerardino, Luca Businaro, Mark Hopkinson, Antonio Polimeni, Marco Felici
 “Site-Controlled Single-Photon Emitters Fabricated by Near-Field Illumination”
 Advanced Materials **30**, 1870147 (2018)
199. M Felici, G Pettinari, F Biccari, M Capizzi, A Polimeni
 “Spatially selective hydrogen irradiation of dilute nitride semiconductors: a brief review”
 Semiconductor Science and Technology **33**, 053001 (2018)

198. Riccardo Panetta, Guido Righini, Marcello Colapietro, Luisa Barba, Davide Tedeschi, Antonio Polimeni, Andrea Cicciooli, Alessandro Latini
“Azetidinium lead iodide: synthesis, structural and physico-chemical characterization”
Journal of Materials Chemistry A **6**, 10135-10148 (2018)

2017

197. M. De Luca, S. Rubini, M. Felici, A. Meaney, P. C. M. Christianen, F. Martelli, and A. Polimeni
“Addressing the fundamental electronic properties of wurtzite GaAs nanowires by high-field magneto-photoluminescence spectroscopy”
Nano Letters **17**, 6540 (2017)
196. M. De Luca and A. Polimeni
“Electronic properties of wurtzite-phase InP nanowires determined by optical and magneto-optical spectroscopy”
Applied Physics Review **4**, 041102 (2017) *invited paper*
195. H. A. Fonseka, A. S. Ameruddin, P. Caroff, D. Tedeschi, M. De Luca, F. Mura, Y. Guo, M. Lysevych, F. Wang, H. H. Tan, A. Polimeni, C. Jagadish
“InP–In_xGa_{1-x}As core-multi-shell nanowire quantum wells with tunable emission in the 1.3–1.55 μm wavelength range”
Nanoscale **9**, 13554 (2017)
194. M. B. Rota, A. S. Ameruddin, J. Wong-Leung, A. Belabbes, Q. Gao, A. Miriametro, F. Mura, H. H. Tan, A. Polimeni, F. Bechstedt, C. Jagadish, M. Capizzi
“Critical Temperature for the Conversion from Wurtzite to Zinblend of the Optical Emission of InAs Nanowires”
Journal of Physical Chemistry C **121**, 16650 (2017)
193. G. Pettinari, A. Gerardino, L. Businaro, A. Polimeni, M. Capizzi, M. Hopkinson, S. Rubini, F. Biccari, F. Intonti, A. Vinattieri, M. Gurioli, and M Felici
“A lithographic approach for quantum dot-photonic crystal nanocavity coupling in dilute nitrides”
Microelectronic Engineering **174**, 16 (2017)

2016

192. M. B Rota, A. S Ameruddin, H A. Fonseka, Q. Gao, F. Mura, A. Polimeni, Antonio Miriametro, H Hoe Tan, Chennupati Jagadish, Mario Capizzi
“Bandgap Energy of Wurtzite InAs Nanowires”
Nano Letters **16**, 5197 (2016)
191. Davide Tedeschi, Marta De Luca, A Granados del Águila, Qian Gao, Gina Ambrosio, Mario Capizzi, Hark Hoe Tan, Peter CM Christianen, Chennupati Jagadish, Antonio Polimeni
“Value and Anisotropy of the Electron and Hole Mass in Pure Wurtzite InP Nanowires”
Nano Letters **16**, 6213 (2016)
190. Martyna Grydlik, Mark T Lusk, Florian Hackl, A. Polimeni, Thomas Fromherz, Wolfgang Jantsch, Friedrich Schäffler, Moritz Brehm
“Laser Level Scheme of Self-Interstitials in Epitaxial Ge Dots Encapsulated in Si”
Nano Letters **16**, 6802 (2016)
189. D. Tedeschi, M. De Luca, H A. Fonseka, Q. Gao, F. Mura, H. H. Tan, S. Rubini, F. Martelli, C. Jagadish, M. Capizzi, A. Polimeni
“Long-Lived Hot Carriers in III–V Nanowires”
Nano Letters **16**, 3085 (2016)

188. A. Di Trolio, P. Alippi, Elvira M. Bauer, G Ciatto, MH Chu, G. Varvaro, A. Polimeni, M. Capizzi, M. Valentini, F. Bobba, C. Di Giorgio, A. Amore Bonapasta
"Ferromagnetism and conductivity in hydrogen irradiated Co-doped ZnO thin films"
 ACS applied materials & interfaces **8**, 12925 (2016)
187. M. Valentini, C. Malerba, F. Menchini, D. Tedeschi, A. Polimeni, M. Capizzi, and A. Mittiga
"Effect of the order-disorder transition on the optical properties of Cu₂ZnSnS₄"
 Applied Physics Letters **108**, 211909 (2016)

2015

186. S. Birindelli, M. Kesaria, D. Giubertoni, G. Pettinari, A. V. Velichko, Q. D. Zhuang, A. Krier, A. Patanè, A. Polimeni, and M. Capizzi
"Peculiarities of the hydrogenated In(AsN) alloy"
 Semiconductor Science and Technology **30**, 105030 (2015)
185. G. Pettinari, F. Filippone, A. Polimeni, G. Mattioli, A. Patanè, V. Lebedev, M. Capizzi, and A. Amore Bonapasta
"Genesis of "solitary Cations" Induced by Atomic Hydrogen"
 Advanced Functional Materials **25**, 5353-5359 (2015)
184. G. Pettinari, M. Capizzi, and A. Polimeni
"Carrier masses and band-gap temperature sensitivity in Ga(AsBi) alloys"
 Semiconductor Science and Technology **30**, 094002 (2015)
183. Attilio Zilli, Marta De Luca, Davide Tedeschi, H. Aruni Fonseka, Antonio Miriametro, Hark Hoe Tan, Chennupati Jagadish, Mario Capizzi, and Antonio Polimeni
"Temperature Dependence of Interband Transitions in Wurtzite InP Nanowires"
 ACS Nano **9**, 4277-4287 (2015)
182. Marta De Luca, Attilio Zilli, H. Aruni Fonseka, Sudha Mokkalapati, Antonio Miriametro, Hark Hoe Tan, Leigh Morris Smith, Chennupati Jagadish, Mario Capizzi, and Antonio Polimeni
"Polarized Light Absorption in Wurtzite InP Nanowire Ensembles"
 Nano Letters, **15**, 998 (2015)
181. G. Ciatto, G. Pettinari, N. Balakrishnan, F. Berenguer, A. Patanè, S. Birindelli, M. Felici, and A. Polimeni
"Synchrotron x-ray diffraction study of micro-patterns obtained by spatially selective hydrogenation of GaAsN"
 Applied Physics letters **106**, 051905 (2015)
180. A. V. Velichko, A. Patanè, M. Capizzi, I. C. Sandall, D. Giubertoni, O. Makarovskiy, A. Polimeni, A. Krier, Q. Zhuang, and C. H. Tan
"H-tailored surface conductivity in narrow band gap In(AsN)"
 Applied Physics Letters **106**, 022111 (2015)

2014

179. M. De Luca, A. Polimeni, H. A. Fonseka, A. J. Meaney, P. C. M. Christianen, J. C. Maan, S. Paiman, H. H. Tan, F. Mura, C. Jagadish, and M. Capizzi
"Magneto-optical properties of wurtzite-phase InP nanowires"
 Nano Letters **14**, 4250 (2014)
178. M. Felici, S. Birindelli, R. Trotta, M. Francardi, A. Gerardino, A. Notargiacomo, S. Rubini, F. Martelli, M. Capizzi and A. Polimeni
"Nanoscale Tailoring of the Polarization Properties of Dilute-Nitride Semiconductors via H-Assisted Strain Engineering"
 Physical Review Applied **2**, 064007 (2014)
177. E. Giulotto, M. Geddo, M. Patrini, G. Guizzetti, M. Felici, M. Capizzi, A. Polimeni, F. Martelli, and S. Rubini
"H irradiation effects on the GaAs-like Raman modes in GaAs_{1-x}N_x/GaAs_{1-x}N_x:H planar heterostructures"
 Journal of Applied Physics **116**, 245304 (2014)

176. Simone Birindelli, Marco Felici, Johannes S. Wildmann, Antonio Polimeni, Mario Capizzi, Annamaria Gerardino, Silvia Rubini, Faustino Martelli, Armando Rastelli, and Rinaldo Trotta
 “Single photons on demand from novel site-controlled GaAsN/GaAsN:H quantum dots”
 Nano Letters **14**, 1275 (2014)
175. L. Amidani, G. Ciatto, F. Boscherini, F. Filippone, G. Mattioli, P. Alippi, F. Bondino, A. Polimeni, M. Capizzi, and A. Amore Bonapasta
 “Connections between local and macroscopic properties in solids: The case of N in III-V-N alloys”
 Physical Review B **89**, 085301 (2014)
174. G. Pettinari, M. Felici, R. Trotta, M. Capizzi, and A. Polimeni
 “Hydrogen effects in dilute III-N-V alloys: From defect engineering to nanostructuring”
 Journal of Applied Physics **115**, 012011 (2014)

2013

173. G. Pettinari, N. Balakrishnan, O. Makarovsky, R.P. Campion, A. Polimeni, M. Capizzi, and A. Patanè
 “A micrometer-size movable light emitting area in a resonant tunneling light emitting diode”
 Applied Physics Letters **103**, 241105 (2013)
172. Marta De Luca, Antonio Polimeni, Mario Capizzi, Alan J. Meaney, Peter C. M. Christianen, Jan Kees Maan, Francesco Mura, Silvia Rubini, and Faustino Martelli
 “Determination of Exciton Reduced Mass and Gyromagnetic Factor of Wurtzite (InGa)As Nanowires by Photoluminescence Spectroscopy under High Magnetic Fields”
 ACS Nano **7**, 10717 (2013)
171. Marta De Luca, Antonio Polimeni, Marco Felici, Antonio Miriametro, Mario Capizzi, Francesco Mura, Silvia Rubini, and Faustino Martelli
 “Excitonic recombination and absorption in $In_xGa_{1-x}As/GaAs$ heterostructure nanowires”
 Physical Review B **87**, 235304 (2013)
170. G. Pettinari, A. Polimeni, M. Capizzi, H. Engelkamp, P. C. M. Christianen, J. C. Maan, A. Patanè, T. Tiedje
 “Effects of Bi incorporation on the electronic properties of GaAs: Carrier masses, hole mobility, and Bi-induced acceptor states”
 Physica Status Solidi B **250**, 779 (2013)
169. Marta De Luca, Antonio Polimeni, Marco Felici, Antonio Miriametro, Mario Capizzi, Francesco Mura, Silvia Rubini, and Faustino Martelli
 “Resonant depletion of photogenerated carriers in InGaAs/GaAs nanowire mats”
 Applied Physics Letters **102**, 173102 (2013)
168. N. V. Kozlova, G. Pettinari, O. Makarovsky, N. Mori, A. Polimeni, M. Capizzi, Q. D. Zhuang, A. Krier, and A. Patanè
 “Nonresonant hydrogen dopants in In(AsN): A route to high electron concentrations and mobilities”
 Physical Review B **87**, 165207 (2013)
167. D. Dagnelund, C. W. Tu, A. Polimeni, M. Capizzi, W. M. Chen and I. A. Buyanova
 “Effect of thermal annealing on defects in post-growth hydrogenated GaNP”
 Physica Status Solidi (C) **10**, 561 (2013)
166. M. Felici, A. Polimeni, G. Lavenuta, E. Tartaglini, M. De Luca, M. Capizzi, A. Notargiacomo, R. Carron, D. Fekete, P. Gallo, B. Dwir, A. Rudra, E. Kapon, G. Pettinari, P. C. M. Christianen, and J. C. Maan
 “Effects of hydrogen irradiation on the optical and electronic properties of site-controlled InGaAsN V-groove quantum wires”
 Physica Status Solidi (C) **10**, 556 (2013)

2012

165. A. F. Qasrawi, K. F. Ilaiwi, and A. Polimeni
 “Hydrogen implantation effects on the electrical and optical properties of InSe thin films”
 Turkish Journal of Physics **36**, 385 (2012)
164. G. Pettinari, A. Patanè, A. Polimeni, M. Capizzi, X. F. Lu, and T. Tiedje

- “Effects of hydrogen on the electronic properties of Ga(AsBi) alloys”*
Applied Physics Letters **101**, 222103 (2012).
163. M. De Luca, G. Pettinari, G. Ciatto, L. Amidani, F. Filippone, A. Polimeni, E. Fonda, F. Boscherini, A. Amore Bonapasta, D. Giubertoni, A. Knübel, V. Lebedev, and M. Capizzi
“Identification of four-hydrogen complexes in In-rich $In_xGa_{1-x}N$ ($x>0.4$) alloys using photoluminescence, x-ray absorption, and density functional theory”
Physical Review B Rapid Communication **86**, 201202 (2012)
162. L. Wen, M. Stavola, W. B. Fowler, R. Trotta, A. Polimeni, M. Capizzi, G. Bisognin, M. Berti, S. Rubini, and F. Martelli
“Microscopic origin of compressive strain in hydrogen-irradiated dilute $GaAs_{1-y}N_y$ alloys: Role of $N-H_n$ centers with $n>2$ and their thermal stability”
Physical Review B **86**, 085206 (2012)
161. Marco Felici, Antonio Polimeni, Elena Tartaglini, Andrea Notargiacomo, Marta De Luca, Romain Carron, Dan Fekete, Benjamin Dwir, Alok Rudra, Mario Capizzi, and Eli Kapon
“Reduced temperature sensitivity of the polarization properties of hydrogenated InGaAsN V-groove quantum wires”
Applied Physics Letters **101**, 151114 (2012)
160. S. Frabboni, V. Grillo, G. C. Gazzadi, R. Balboni, R. Trotta, A. Polimeni, M. Capizzi, F. Martelli, S. Rubini, G. Guzzinati, and F. Glas
“Convergent beam electron-diffraction investigation of lattice mismatch and static disorder in $GaAs/GaAs_{1-x}N_x$ intercalated $GaAs/GaAs_{1-x}N_x:H$ heterostructures”
Applied Physics Letters **101**, 111912 (2012)
159. N. Balakrishnan, G. Pettinari, O. Makarovskiy, L. Turyanska, M. W. Fay, M. De Luca, A. Polimeni, M. Capizzi, F. Martelli, S. Rubini, and A. Patanè
“Band-gap profiling by laser writing of hydrogen-containing III-N-Vs”
Physical Review B **86**, 155307 (2012)
158. M. Geddo, E. Giulotto, M. S. Grandi, M. Patrini, R. Trotta, A. Polimeni, M. Capizzi, F. Martelli, and S. Rubini
“An all optical mapping of the strain field in $GaAsN/GaAsN:H$ wires”
Applied Physics Letters **101**, 191908 (2012)
157. Marco Felici, Giorgio Pettinari, Romain Carron, Giovanna Lavenuta, Elena Tartaglini, Antonio Polimeni, Dan Fekete, Pascal Gallo, Benjamin Dwir, Alok Rudra, Peter C. M. Christianen, Jan C. Maan, Mario Capizzi, and Eli Kapon
“Magneto-optical properties of single, site-controlled InGaAsN quantum wires grown on pre-patterned GaAs substrates”
Physical Review B **85**, 155319 (2012)
156. R. Trotta, A. Polimeni, and M. Capizzi
“Hydrogen incorporation in III-N-V semiconductors: From macroscopic to nanometre control of the material physical properties”
Advanced Functional Materials **22**, 1782 (2012)
155. G. Pettinari, A. Patanè, A. Polimeni, M. Capizzi, Xianfeng Lu, and T. Tiedje
“Bi-induced p-type conductivity in nominally undoped Ga(AsBi)”
Applied Physics Letters **100**, 092109 (2012)
154. D. Dagnelund, I. P. Vorona, G. Nosenko, X. J. Wang, C. W. Tu, H. Yonezu, A. Polimeni, M. Capizzi, W. M. Chen, and I. A. Buyanova
“Effects of hydrogenation on non-radiative defects in GaNP and GaNAs alloys: An optically detected magnetic resonance study”
Journal of Applied Physics **111**, 023501 (2012)

2011

153. M. Shafi, R. H. Mari, A. Khatab, M. Henini, A. Polimeni, M. Capizzi, and M. Hopkinson
“Deep levels in H-irradiated $GaAs_{1-x}N_x$ ($x < 0.01$) grown by molecular beam epitaxy”
Journal of Applied Physics **110**, 124508 (2011)
152. J. Alvarez and J.-P. Kleider R. Trotta, A. Polimeni, M. Capizzi F. Martelli and L. Mariucci, and S. Rubini

“Giant and reversible enhancement of the electrical resistance of GaAs_{1-x}N_x by hydrogen irradiation”
Physical Review B **84**, 085331 (2011)

151. Y. Puttisong, D. Dagnelund, I. A. Buyanova, C. W. Tu, A. Polimeni, M. Capizzi, and W. M. Chen
“Room Temperature Spin Filtering Effect in GaNAs: Role of Hydrogen”
Applied Physics Letters **99**, 152109 (2011)
150. N. Balakrishnan, A. Patanè, O. Makarovskiy, A. Polimeni, M. Capizzi, F. Martelli, and S. Rubini
“Laser writing of the electronic activity of – and H-atoms in GaAs”
Applied Physics Letters **99**, 021105 (2011)
149. R. Trotta, A. Polimeni, F. Martelli, G. Pettinari, M. Capizzi, L. Felisari, S. Rubini, M. Francardi, A. Gerardino, P. C. M. Christianen, and J. C. Maan
“Fabrication of Site-Controlled Quantum Dots by Spatially Selective Incorporation of Hydrogen in Ga(AsN)/GaAs Heterostructures”
Advanced Materials **23**, 2706 (2011)
148. M. Geddo, M. Patrini, G. Guizzetti, M. Galli, R. Trotta, A. Polimeni, M. Capizzi, F. Martelli, and S. Rubini
“Optical study of hydrogen-irradiated GaAsN/GaAs heterostructures”
Journal of Applied Physics **109**, 123511 (2011)
147. G. Pettinari, H. Engelkamp, P. C. M. Christianen, J. C. Maan, A. Polimeni, M. Capizzi, X. Lu, and T. Tiedje
“Compositional evolution of Bi-induced acceptor states in GaAs_{1-x}Bi_x alloy”
Physical Review B **83**, 201201 (2011)
146. R. Trotta, A. Polimeni, and M. Capizzi
“Hydrogen-mediated nanostructuring of dilute nitride semiconductors”
Physica Status Solidi B-basic solid state physics **248**, 1195 (2011)
145. D. Dagnelund, X. J. Wang, C. W. Tu, A. Polimeni, M. Capizzi, W. M. Chen, and I. A. Buyanova
“Effect of postgrowth hydrogen treatment on defects in GaNP”
Applied Physics Letters **98**, 141920 (2011)

2010

144. R. Trotta, L. Cavigli, L. Felisari, A. Polimeni, A. Vinattieri, M. Gurioli, M. Capizzi, F. Martelli, S. Rubini, L. Mariucci, M. Francardi, and A. Gerardino
“Quantum confinement effects in hydrogen-intercalated GaAs_{1-x}N_x/GaAsN:H heterostructures investigated by photoluminescence spectroscopy”
Physical Review B **81**, 235327 (2010)
143. G. Pettinari, A. Polimeni, J. H. Blokland, R. Trotta, P. C. M. Christianen, M. Capizzi, J. C. Maan, X. Lu, E. C. Young, and T. Tiedje
“Compositional dependance of the exciton reduced mass in GaAs_{1-x}Bi_x (x=0-10%)”
Physical Review B **81**, 235211 (2010)
142. L. Wen, F. Bekisli, M. Stavola, W. B. Fowler, R. Trotta, A. Polimeni, M. Capizzi, S. Rubini, and F. Martelli
“Detailed structure of the H-N-H center in GaAs_{1-y}N_y revealed by vibrational spectroscopy under uniaxial stress”
Physical Review B **81**, 233201 (2010)

2009

141. R. Trotta, A. Polimeni, and M. Capizzi
“Hydrogen-induced defect engineering in dilute nitride semiconductors”
Physica Status Solidi C, **6** 2644 (2009) invited paper
140. R. Trotta, D. Giubertoni, A. Polimeni, M. Bersani, M. Capizzi, F. Martelli, S. Rubini, G. Bisognin, and M. Berti
“Hydrogen diffusion in GaAs_{1-x}N_x”
Physical Review B **80**, 195206 (2009)
139. R. Trotta, A. Polimeni, M. Capizzi, F. Martelli, S. Rubini, M. Francardi, A. Gerardino, and L. Mariucci
“Light polarization control in strain-engineered GaAsN/GaAsN:H heterostructures”
Applied Physics Letters **94**, 261905 (2009)

138. G. Pettinari, A. Polimeni, M. Capizzi, J. H. Blokland, P. C. M. Christianen, J. C. Maan, V. Lebedev, V. Cimalla, and O. Ambacher
"Carrier mass measurements in degenerate indium nitride"
 Physical Review B **79**, 165207 (2009)
137. G. Ciatto, F. Boscherini, A. Amore Bonapasta, F. Filippone, A. Polimeni, M. Capizzi, M. Berti, G. Bisognin, D. De Salvador, L. Floreano, F. Martelli, S. Rubini, and L. Grenouillet
"Local structure of nitrogen-hydrogen complexes in dilute nitrides"
 Physical Review B **79**, 165205 (2009)
136. E. P. O'Reilly, A. Lindsay, P. J. Klar, A. Polimeni, and M. Capizzi
"Trends in the electronic structure of dilute nitride alloys"
 Semiconductor Science and Technology **24**, 033001 (2009)

2008

135. L. Felisari, V. Grillo, F. Martelli, R. Trotta, A. Polimeni, M. Capizzi, F. Jabeen, and L. Mariucci
"In-plane band gap modulation investigated by secondary electron imaging of GaAsN/GaAsN:H heterostructures"
 Applied Physics Letters **93**, 102116 (2008)
134. S. Sanguinetti, M. Guzzi, E. Grilli, M. Gurioli, L. Seravalli, P. Frigeri, S. Franchi, M. Capizzi, S. Mazzucato, and A. Polimeni
"Effective phonon bottleneck in the carrier thermalization of InAs/GaAs quantum dots"
 Physical Review B **78**, 085313 (2008)
133. G. Pettinari, A. Polimeni, M. Capizzi, J. Bockland, P. Christianen, J. C. Maan, E. Young, and T. Tiedje
"Influence of bismuth incorporation on the valence and conduction band edges of GaAs_{1-x}Bi_x"
 Applied Physics Letters **92**, 262105 (2008)
132. R. Trotta, A. Polimeni, M. Capizzi, D. Giubertoni, M. Bersani, G. Bisognin, M. Berti, S. Rubini, F. Martelli, L. Mariucci, M. Francardi, and A. Gerardino
"Effect of hydrogen incorporation temperature in in-plane engineered GaAsN/GaAsN:H heterostructures"
 Applied Physics Letters **92**, 221901 (2008)
131. K. Hantke, S. Horst, S. Chatterjee, P. J. Klar, K. Volz, W. Stolz, W. W. Ruehle, F. Masia, G. Pettinari, A. Polimeni, and M. Capizzi
"Zero-phonon lines of nitrogen-cluster states in GaN_xAs_{1-x}: H identified by time-resolved photoluminescence"
 Journal of Materials Science **43**, 4344 (2008)
130. A. Polimeni, F. Masia, G. Pettinari, R. Trotta, M. Felici, M. Capizzi, A. Lindsay, E. P. O'Reilly, T. Niebling, W. Stolz, and P. J. Klar
"Role of strain and properties of N clusters at the onset of the alloy limit in GaAs_{1-x}N_x"
 Physical Review B **77**, 155213 (2008)
129. G. Pettinari, F. Masia, M. Capizzi, A. Polimeni, M. Losurdo, G. Bruno, T.H. Kim, S. Choi, A. Brown, V. Lebedev, V. Cimalla, O. Ambacher
"Experimental evidence of different hydrogen donors in n-type InN"
 Physical Review B **77**, 125207 (2008)
128. G. Bisognin, D. De Salvador, E. Napolitani, M. Berti, A. Polimeni, M. Capizzi, S. Rubini, F. Martelli, A. Franciosi
"High-resolution X-ray diffraction in situ study of very small complexes: the case of hydrogenated dilute nitrides"
 Journal of Applied Crystallography **41**, 366 (2008)
127. S. Kleekajai, F. Jiang, K. Colon, M. Stavola, W. B. Fowler, K. R. Martin, A. Polimeni, M. Capizzi, Y. G. Hong, H. P. Xin, C. W. Tu, G. Bais, S. Rubini, and F. Martelli
"Vibrational properties of the H-N-H complex in dilute III-N-V alloys: Infrared spectroscopy and density functional theory"
 Physical Review B **77**, 085213 (2008)
126. A. Polimeni, G. Pettinari, R. Trotta, F. Masia, M. Felici, M. Capizzi, A. Lindsay, E. P. O'Reilly, T. Niebling, W. Stolz, P. J. Klar, F. Martelli, and S. Rubini
"Photoluminescence under magnetic field and hydrostatic pressure for probing the electronic properties of GaAsN"
 Physica Status solidi A-Applications and Materials Science **205**, 107 (2008)

2007

125. G. Bisognin, D. De Salvador, E. Napolitani, M. Berti, A. Polimeni, M. Felici, M. Capizzi, G. Bais, F. Jabeen, M. Piccin, S. Rubini, F. Martelli, A. Franciosi
 “*Thermal evolution of small N-D complexes in deuterated dilute nitrides revealed by in-situ high resolution X-ray diffraction*”
 Physica Status Solidi A: Applications and Materials Science **204**, 2766 (2007)
124. F. Boscherini, M. Malvestuto, G. Ciatto, F. D'Acapito, G. Bisognin, D. De Salvador, M. Berti, M. Felici, A. Polimeni, Y. Nabetani
 “*X-ray absorption and diffraction study of II-VI dilute oxide semiconductor alloy epilayers*”
 Journal of Physics- Condensed Matter **19**, 446201 (2007)
123. Marina Berti, Gabriele Bisognin, Davide De Salvador, Enrico Napolitani, and Silvia Vangelista, Antonio Polimeni, Mario Capizzi, Federico Boscherini, Gianluca Ciatto, Silvia Rubini, Faustino Martelli, and Alfonso Franciosi
 “*Formation and dissolution of D-N complexes in dilute nitrides*”
 Physical Review B **76**, 205323 (2007)
122. Maria Losurdo, Maria M. Giangregorio, Giovanni Bruno Tong-Ho Kim, Soojeong Choi, April S. Brown, Giorgio Pettinari, Mario Capizzi, and Antonio Polimeni
 “*Behavior of hydrogen in InN investigated in real time exploiting spectroscopic ellipsometry*”
 Applied Physics Letters **91**, 081917 (2007)
121. S. Kleekajai, K. Colon, M. Stavola, W. B. Fowler, K. R. Martin, A. Polimeni, M. Capizzi, Y. G. Hong, H. P. Xin, and C. W. Tu
 “*Vibrational spectroscopy of hydrogenated GaP_{1-y}N_y*”
 Physica B **401-402**, 347 (2007)
120. G. Pettinari, A. Polimeni, F. Masia, R. Trotta, M. Felici, M. Capizzi, T. Niebling, W. Stolz, and P. J. Klar
 “*Electron mass in dilute nitrides and its anomalous dependence on hydrostatic pressure*”
 Physical Review Letters **98**, 146402 (2007)
119. M. Geddo, T. Ciabattoni, G. Guizzetti, M. Galli, M., Patrini, A. Polimeni, R. Trotta, M. Capizzi, G. Bais, M. Piccin, S. Rubini, F. Martelli, and A. Franciosi
 “*Photorefectance and reflectance investigation of deuterium-irradiated GaAsN*”
 Applied Physics Letters **90**, 091907 (2007)
118. M. Losurdo, M. M. Giangregorio, G. Bruno, T.-H. Kim, P. Wu, S. Choi, A. Brown, F. Masia, M. Capizzi, and A. Polimeni
 “*Characteristics of InN grown on SiC under the In-rich regime by molecular beam heteroepitaxy*”
 Applied Physics Letters **90**, 011910 (2007)
117. P. J. Klar, J. Teubert, M. Güngerich, T. Niebling, H. Grüning, W. Heimbrod, K. Volz, W., Stolz, A. Polimeni, M. Capizzi, E. P. O'Reilly, A. Lindsay, M. Galluppi, L. Geelhaar, H. Riechert, and S. Tomić
 “*Hydrostatic pressure experiments on dilute nitride alloys*”
 Physica Status Solidi (B) **244**, 24 (2007)

2006

116. G. Pettinari, F. Masia, A. Polimeni, M. Felici, A. Frova, M. Capizzi, A. Lindsay, E. P. O'Reilly, P. J. Klar, W. Stolz, G. Bais, M. Piccin, S. Rubini, F. Martelli, and A. Franciosi,
 “*Influence of nitrogen-cluster states on the gyromagnetic factor of electrons in GaAs_{1-x}N_x*”
 Physical Review B, **74**, 245202 (2006)
115. M. Gurioli, M. Zamfirescu, A. Vinattieri, S. Sanguinetti, E. Grilli, M. Guzzi, S. Mazzucato, A. Polimeni, M. Capizzi, L. Serevalli, P. Frigeri, and S. Franchi
 “*Characterization of hydrogen passivated defects in strain-engineered semiconductor quantum dot structures*”
 Journal of Applied Physics, **100**, 84313 (2006)
114. M. Güngerich, P. J. Klar, W. Heimbrod, K. Stolz, K. Volz, K. Köhler, J. Wagner, A. Polimeni, and M. Capizzi
 “*Correlation of band formation and local vibrational mode structure in Ga_{0.95}Al_{0.05}As_{1-x}N_x with 0 ≤ x ≤ 0.03*”
 Physica Status Solidi C **3**, 619 (2006)
113. G. Ciatto, F. Boscherini, A. Amore Bonapasta, F. Filippone, A. Polimeni, and M. Capizzi
 “*C_{2v} nitrogen-hydrogen complexes in GaAsN revealed by X-ray absorption near-edge spectroscopy and ab initio*

simulations"

Physica Status Solidi C **3**, 1836 (2006)

112. M. Felici, A. Polimeni, G. Salviati, L. Lazzarini, N. Armani, F. Masia, M. Capizzi, F. Martelli, M. Lazzarino, G. Bais, M. Piccin, S. Rubini, A. Franciosi
"In-plane bandgap engineering by modulated hydrogenation of dilute nitride semiconductors"
 Advanced Materials **18**, 1993 (2006)
111. M. Felici, R. Trotta, F. Masia, A. Polimeni, A. Miriametro, M. Capizzi, P. J. Klar, W. Stolz
"Compositional disorder in GaAs_{1-x}N_x:H investigated by photoluminescence"
 Physical Review B **74**, 85203 (2006)
110. G. Bisognin, D. De Salvador, A. V. Drigo, E. Napolitani, A. Sambo, M., Berti, A. Polimeni, M. Felici, M. Capizzi, M. Güngerich, P. J. Klar, G. Bais, F. Jabeen, M. Piccin, S. Rubini, F. Martelli, A. Franciosi
"Hydrogen-nitrogen complexes in dilute nitride alloys: Origin of the compressive lattice strain"
 Applied Physics Letters **89**, 61904 (2006)
109. S. V. Dudiy, A. Zunger, M. Felici, A. Polimeni, M. Capizzi, H. P. Xin, and C. W. Tu
"Nitrogen-induced perturbation of the valence band states in GaP_{1-x}N_x alloys"
 Physical Review B **74**, 155303 (2006)
108. F. Masia, G. Pettinari, A. Polimeni, M. Felici, A. Miriametro, M. Capizzi, A. Lindsay, S. B. Healy, E. P. O'Reilly, A. Cristofoli, G. Bais, M. Piccin, S. Rubini, F. Martelli, A. Franciosi, P. J. Klar, K. Volz, W. Stolz
"Interaction between conduction band edge and nitrogen states probed by carrier effective-mass measurements in GaAs_{1-x}N_x"
 Physical Review B **73**, 073201 (2006)
107. M. Felici, A. Polimeni, M. Capizzi, Y. Nabetani, T. Okuno, K. Aoki, T. Kato, T. Matsumoto, T. Hirai
"Passivation of an isoelectronic impurity by atomic hydrogen: The case of ZnTe:O"
 Applied Physics Letters **88**, 101910 (2006)
106. J. Teubert, P. J. Klar, W. Heimbrod, K. Volz, W. Stolz, A. Polimeni, M. Capizzi
"Competition of N-passivation and Te-passivation in hydrogenation of Te-doped (Ga,In)(N,As)"
 Physica E **32**, 218 (2006)
105. I. A. Buyanova, M. Izadifard, T. Seppanen, J. Birch, W. M. Chen, S. J. Pearton, A. Polimeni, M. Capizzi, M. S. Brandt, C. Bihler, Y. G. Hong, C. W. Tu,
"Unusual effects of hydrogen on electronic and lattice properties of GaNP alloys"
 Physica B **376**, 568 (2006)

2005

104. K. Hantke, J. D. Heber, S. Chatterjee, P. J. Klar, K. Volz, W. Stolz, W. W. Rühle, A. Polimeni, and M. Capizzi
"Carrier relaxation dynamics in annealed and hydrogenated (GaIn)(NAs)/GaAs quantum wells"
 Applied Physics Letters **87**, 252111 (2005)
103. S. Mazzucato, D. Nardin, M. Capizzi, A. Polimeni, A. Frova, L. Serravalli, and S. Franchi
"Defect passivation in strain engineered InAs/(InGa)As quantum dots"
 Materials Science & Engineering C-Biomimetic and Supramolecular Systems **25** 830, (2005)
102. G. Ciatto, H. Renevier, M. G. Proietti, A. Polimeni, M. Capizzi, S. Mobilio, and F. Boscherini
"Effects of hydrogenation on the local structure of In_xGa_{1-x}As_{1-y}N_y quantum wells and GaAs_{1-y}N_y epilayers"
 Physical Review B **72**, 085322 (2005)
101. G. Ciatto, F. Boscherini, A. Amore Bonapasta, F. Filippone, A. Polimeni, and M. Capizzi
"Nitrogen-hydrogen complex in GaAs_xN_{1-x} revealed by x-ray absorption spectroscopy"
 Physical Review B **71**, Rapid Communication 201301 (2005)
100. M. Felici, A. Polimeni, A. Miriametro, M. Capizzi, H. P. Xin, and C. W. Tu
"Free carrier and/or exciton trapping by nitrogen pairs in dilute GaP_{1-x}N_x"
 Physical Review B **71**, 045209 (2005)
99. G. Ciatto, F. D'Acapito, S. Sanna, V. Fiorentini, A. Polimeni, M. Capizzi, S. Mobilio, and F. Boscherini
"Comparison between experimental and theoretical determination of the local structure of the GaAs_{1-y}N_y dilute

nitride alloy"

Physical Review B **71**, 115210 (2005)

2004

98. A. Polimeni, F. Masia, G. Baldassarri Höger von Högersthal, and M. Capizzi
 "Magnetophotoluminescence studies of $In_xGa_{1-x}As_{1-y}N_y$: a measurement of the electron effective mass, exciton size, and degree of carrier localization"
 Journal of Physics: Condensed Matter **16**, S3186 (2004)
97. M. Izadifard, I. A. Buyanova, W. M. Chen, A. Polimeni, M. Capizzi, and C. W. Tu
 "Role of hydrogen in improving optical quality of GaNAs alloys"
 Physica E **20**, 313 (2004)
96. D. Ochoa, A. Polimeni, M. Capizzi, A. Frova, L. Seravalli, M. Minelli, P. Frigeri, and S. Franchi
 "Hydrogenation of strain engineered InAs/In_xGa_{1-x}As quantum dots"
 Physica Status Solidi C **1**, 581 (2004)
95. I. A. Buyanova, M. Izadifard, I. G. Ivanov, J. Birch, W. M. Chen, M. Felici, A. Polimeni, M. Capizzi, Y. G. Hong, H. P. Xin, and C. W. Tu
 "Direct experimental evidence for unusual effects of hydrogen on the electronic and vibrational properties of GaN_xP_{1-x} alloys: A proof for a general property of dilute nitrides"
 Physical Review B **70**, 245215, (2004)
94. A. Polimeni, M. Capizzi, Y. Nabetani, Y. Ito, T. Okuno, T. Kato, T. Matsumoto, and T. Hirai
 "Temperature dependence and bowing of the bandgap in ZnSe_{1-x}O_x"
 Applied Physics Letters **84**, 3304 (2004)
93. A. Polimeni, F. Masia, A. Vinattieri, G. Baldassarri Hoeger von Hoegersthal, and M. Capizzi
 "Single carrier localization in $In_xGa_{1-x}As_{1-y}N_y$ investigated by magnetophotoluminescence"
 Applied Physics Letters **84**, 2295 (2004)
92. F. Jiang, Michael Stavola, M. Capizzi, A. Polimeni, A. Amore Bonapasta, and F. Filippone
 "Vibrational spectroscopy of hydrogenated GaAs_{1-y}N_y: A structure-sensitive test of an H₂^{*}(N) model"
 Physical Review B **69**, Rapid Communication 041309 (2004)
91. A. Polimeni, G. Baldassarri Hoeger von Hoegersthal, F. Masia, A. Frova, M. Capizzi, Simone Sanna, Vincenzo Fiorentini, P. J. Klar, and W. Stolz
 "Tunable variation of the electron effective mass and exciton radius in hydrogenated GaAs_{1-x}N_x"
 Physical Review B **69**, Rapid Communication 041201 (2004)
90. A. Polimeni, F. Masia, G. Baldassarri Hoeger von Hoegersthal, A. Frova, M. Capizzi, S. Sanna, V. Fiorentini, P. J. Klar, and W. Stolz
 "Tuning of the electron effective mass and exciton wavefunction size in GaAs_{1-x}N_x"
 Physica E **21**, 747 (2004)

2003

89. A. Polimeni, F. Masia, M. Felici, G. B. H. von Hogersthal, M. Bissiri, A. Frova, M. Capizzi, P. J. Klar, W. Stolz, I. A. Buyanova, W. M. Chen, H. P. Xin, and C. W. Tu
 "Hydrogen-related effects in diluted nitrides"
 Physica B **340**, 371 (2003)
88. A. Polimeni, G. Ciatto, L. Ortega, F. Jiang, F. Boscherini, F. Filippone, A. Amore Bonapasta, M. Stavola, and M. Capizzi
 "Lattice relaxation by atomic hydrogen irradiation of III-N-V semiconductor alloys"
 Physical Review B **68**, 085204 (2003)
87. M. Geddo, G. Guizzetti, M. Capizzi, A. Polimeni, D. Gollub, and A. Forchel
 "Photoreflectance evidence of the N-induced increase of the exciton binding energy in an $In_xGa_{1-x}As_{1-y}N_y$ alloy"
 Applied Physics Letters **83**, 470 (2003)
86. G. Baldassarri Höger von Högersthal, A. Polimeni, F. Masia, M. Bissiri, and M. Capizzi, D. Gollub, M. Fischer, and A. Forchel

"Magnetophotoluminescence studies of (InGa)(AsN)/GaAs heterostructures"
Physical Review B **67**, 233304 (2003)

85. A. Polimeni, M. Bissiri, M. Felici, M. Capizzi, I. A. Buyanova, W. M. Chen, H. P. Xin, and C. W. Tu
"Nitrogen passivation induced by atomic hydrogen: The GaP_{1-y}N_y case"
Physical Review B **67**, Rapid Communication 201303 (2003)
84. F. Masia, A. Polimeni, G. Baldassarri H. V. H., M. Bissiri, M. Capizzi, P. J. Klar, and W. Stolz
"Early manifestation of localization effects in diluted Ga(AsN)"
Applied Physics Letters **82**, 4474 (2003)
83. I. A. Buyanova, M. Izadifard, W. M. Chen, A. Polimeni, M. Capizzi, H. P. Xin, and C. W. Tu
"Hydrogen-induced improvements in optical quality of GaNAs alloys"
Applied Physics Letters **82**, 3662 (2003)
82. A. Vinattieri, D. Alderighi, M. Zamfirescu, M. Colocci, A. Polimeni, M. Capizzi, D. Gollub, M. Fischer, and A. Forchel
"Role of the host matrix in the carrier recombination of InGaAsN alloys"
Applied Physics Letters **82**, 2805 (2003)
81. P. J. Klar, H. Gruning, M. Gungerich, W. Heimbrodt, J. Koch, T. Torunski, W. Stolz, A. Polimeni, and Capizzi
"Global changes of the band structure and the crystal lattice of Ga(N,As) due to hydrogenation"
Physical Review B **67**, Rapid Communication 121206 (2003)
80. D. Ochoa, A. Polimeni, M. Capizzi, A. Patane, M. Henini, L. Eaves, and P. C. Main PC
"Emission energy and polarization tuning of InAs/GaAs self-assembled quantum dots by growth interruption"
Journal of Crystal Growth **251**, 192 (2003)
79. A. Polimeni, M. Bissiri, G. Baldassarri Höger von Högersthal, M. Capizzi, D. Giubertoni, M. Barozzi, M. Bersani, D. Gollub, M. Fischer, and A. Forchel
"Hydrogen as a probe of the electronic properties of (InGa)(AsN)/GaAs heterostructures"
Solid State Electronics **47**, 447 (2003)
78. A. Vinattieri, D. Alderighi, M. Zamfirescu, M. Colocci, A. Polimeni, M. Capizzi, D. Gollub, M. Fischer, A. Forchel
"Exciton Dynamics in InGaAsN/GaAs heterostructures"
Physica Status Solidi (a) **195**, 558 (2003)
77. G. Ciatto, F. Boscherini, F. D'Acapito, S. Mobilio, G. Baldassarri H. V. H., A. Polimeni, M. Capizzi, D. Gollub, and A. Forchel
"Atomic ordering in (InGa)(AsN) quantum wells: An In K-edge X-ray absorption investigation"
Nuclear Instruments and Methods in Physics Research B **200**, 34 (2003)

2002

76. A. Amore Bonapasta, F. Filippone, P. Giannozzi, M. Capizzi, and A. Polimeni
"Structure and passivation effects of mono- and dihydrogen complexes in GaAs_{1-y}N_y"
Physical Review Letters **89**, 216401 (2002)
75. M. Geddo, R. Pezzuto, M. Capizzi, A. Polimeni, D. Gollub, M. Fischer, A. Forchel
"Photoreflectance investigation of hydrogenated (InGa)(AsN)/GaAs heterostructures"
European Physical Journal B **30**, 39 (2002)
74. G. Baldassarri Höger von Högersthal, M. Bissiri, F. Ranalli, V. Gaspari, A. Polimeni, M. Capizzi, A. Frova, M. Fischer, M. Reinhardt, A. Forchel
"Reversibility of the effects of hydrogen on the electronic properties of In_xGa_{1-x}As_{1-y}N_y"
Physica E **13**, 1082 (2002)
73. A. Polimeni, A. Patanè, R. K. Hayden, L. Eaves, M. Henini, P. C. Main, K. Uchida, N. Miura, J. Main, and G. Wurner
"Linewidth broadening of excitonic luminescence from quantum wells in pulsed magnetic fields"
Physica E **13**, 349 (2002)
72. M. Bissiri, G. Baldassarri, A. Polimeni, M. Capizzi, D. Gollub, M. Fischer, M. Reinhardt, and A. Forchel
"Role of N clusters in In_xGa_{1-x}As_{1-y}N_y band-gap reduction"

Physical Review B **66**, 033311 (2002)

71. A. Polimeni, G. Baldassarri, M. Bissiri, M. Capizzi, A. Frova, M. Fischer, M. Reinhardt, and A. Forchel
"Role of hydrogen in III-N-V compound semiconductors"
 Semiconductors Science and Technology **17**, 797 (2002)
70. M. Bissiri, G. Baldassarri, A. Polimeni, V. Gaspari, F. Ranalli, M. Capizzi, A. Amore Bonapasta, F. Jiang, M. Stavola, D. Gollub, M. Fischer, and A. Forchel
"Hydrogen-induced passivation of nitrogen in GaAs_{1-y}N_y"
 Physical Review B **65**, 235210 (2002)
69. M. Bissiri, V. Gaspari, G. Baldassarri, F. Ranalli, A. Polimeni, M. Capizzi, A. Frova, M. Fischer, M. Reinhardt, and A. Forchel
"Nitrogen-related complexes in Ga(AsN) and their interaction with hydrogen"
 Physica Status Solidi a **190**, 651 (2002)
68. M. Henini, A. Patanè, A. Polimeni, A. Levin, L. Eaves, P. C. Main, and G. Hill
"Electrical and optical properties of self-assembled quantum dots"
 Microelectronics Journal **33**, 313 (2002)
67. A. Polimeni, M. Bissiri, A. Augieri, G. Baldassarri, M. Capizzi, D. Gollub, M. Fischer, M. Reinhardt, and A. Forchel
"Reduced temperature dependence of the band gap in GaAs_{1-y}N_y investigated with photoluminescence"
 Physical Review B **65**, 235325 (2002)

2001

66. A. Levin, A. Patanè, F. Schindler, A. Polimeni, L. Eaves, P. C. Main, M. Henini
"Piezoelectric effects on the electron-hole dipole in In_{0.5}Ga_{0.5}As/GaAs self-assembled quantum dots"
 Physica Status Solidi (b) **224**, 37 (2001)
65. A. Patanè, A. Levin, A. Polimeni, L. Eaves, P. C. Main, and M. Henini
"Universality of the Stokes shift for a disordered ensemble of quantum dots"
 Physica Status Solidi (b) **224** 41 (2001)
64. A. Polimeni, M. Capizzi, M. Geddo, M. Fischer, M. Reinhardt, and A. Forchel
"Effect of nitrogen on the temperature dependence of the energy gap in In_xGa_{1-x}As_{1-y}N_y/GaAs single quantum wells"
 Physical Review B **63**, 195320 (2001)
63. A. Polimeni, G. Baldassarri H. V. H., M. Bissiri, M. Capizzi, M. Fischer, M. Reinhardt, and A. Forchel
"Effect of hydrogen on the electronic properties of In_xGa_{1-x}As_{1-y}N_y/GaAs quantum wells"
 Physical Review B **63**, Rapid Communication 201304 (2001)
62. G. Baldassarri H. V. H., M. Bissiri, A. Polimeni, M. Capizzi, M. Fischer, M. Reinhardt, and A. Forchel
"Hydrogen-induced band gap tuning of (InGa)(AsN)/GaAs single quantum wells"
 Applied Physics Letters **78**, 3472 (2001)
61. T. Surkova, A. Patanè, L. Eaves, P. C. Main, M. Henini, A. Polimeni, A. P. Knights and C. Jaynes
"Indium inter-diffusion in annealed and implanted InAs/(AlGa)As self-assembled quantum dots"
 Journal of Applied Physics **89**, 6044 (2001)
60. M. Henini, A. Patanè, A. Polimeni, L. Eaves, P. C. Main, A. Levin, and G. Hill
"Optical properties and laser applications of (InGa)As/(AlGa)As self-assembled quantum dots"
 Japanese Journal of Applied Physics part 1, **40** (3B), 2077 (2001)
59. M. Bissiri, V. Gaspari, A. Polimeni, G. Baldassarri Hoegerstal von Hoegersthal, M. Capizzi, A. Frova, M. Fischer, M. Reinhardt, and A. Forchel
"High temperature photoluminescence efficiency and thermal stability of (InGa)(AsN)/GaAs quantum wells"
 Applied Physics Letters **79**, 2585 (2001)
58. M. Bissiri, V. Gaspari, G. Baldassarri, F. Ranalli, A. Polimeni, M. Capizzi, A. Nucara, M. Geddo, M. Fischer, M. Reinhardt, and A. Forchel
"Effect of hydrogen on the electronic properties of GaAs_{1-y}N_y heterostructures"
 Acta Physica Polonica A **100**, 365 (2001)

57. G. Baldassarri, F. Ranalli, M. Bissiri, V. Gaspari, A. Polimeni, M. Capizzi, A. Nucara, M. Geddo, M. Fischer, M. Reinhardt, and A. Forchel
 “Hydrogen tuning of (InGa)(AsN) optical properties”
 Acta Physica Polonica A **100**, 373 (2001)
56. A. Polimeni, G. Baldassarri, M. Bissiri, V. Gaspari, F. Ranalli, M. Capizzi, A. Frova, A. Miriametro, M. Geddo, M. Fischer, M. Reinhardt, and A. Forchel
 ”Interplay of nitrogen and hydrogen in $In_xGa_{1-x}As_{1-y}N_y/GaAs$ heterostructures”
 Physica B **308**, 850 (2001)

2000

55. A. Polimeni, A. Patanè, M. Henini, L. Eaves, P. C. Main, and G. Hill
 “Carrier hopping in $InAs/Al_yGa_{1-y}As$ quantum dot heterostructures: Effects on optical and laser properties”
 Physica E **7**, 452 (2000)
54. A. Patanè, A. Polimeni, L. Eaves, M. Henini, P.C. Main, P.M. Smowton, E.J. Johnston, P.J. Hulyer E. Herrmann, G. M. Lewis, and G. Hill
 “Experimental studies of the multimode spectral emission in quantum dot lasers”
 Journal of Applied Physics **87**, 1943 (2000)
53. S. Sanguinetti, G. Chiantoni, A. Miotto, E. Grilli, M. Guzzi, M. Henini, A. Polimeni, A. Patanè, L. Eaves, and P. C. Main
 “Self-assembling of $In(Ga)As/GaAs$ quantum dots on (N11) substrates: the (311)A case”
 Micron **31**, 309 (2000)
52. A. Patanè, A. Polimeni, L. Eaves, P. C. Main, M. Henini, A. E. Belyaev, Yu. V. Dubrovskii, P. N. Brounkov, E. E. Vdovin, Yu. N. Khanin, and G. Hill
 “Resonant tunneling and photoluminescence spectroscopy in quantum wells containing self-assembled quantum dots”
 Journal of Applied Physics **88**, 2005 (2000)
51. A. Patanè, A. Polimeni, L. Eaves, P. C. Main, M. Henini, A. E. Belyaev, Yu. V. Dubrovskii, P. N. Brounkov, E. E. Vdovin, Yu. N. Khanin, and G. Hill
 “Modulation of the luminescence spectra of $InAs$ self-assembled quantum dots by resonant tunneling through a quantum well”
 Physical Review B **62**, 13595 (2000)
50. A. Patanè, A. Levin, A. Polimeni, L. Eaves, P. C. Main, M. Henini, and G. Hill
 “Carrier thermalization within a disordered ensemble of self-assembled quantum dots”
 Physical Review B **62**, 11084 (2000)
49. A. Polimeni, M. Capizzi, M. Geddo, M. Fischer, M. Reinhardt, and A. Forchel
 “Effect of temperature on the optical properties of (InGa)(AsN)/GaAs single quantum wells”
 Applied Physics Letters **77**, 2870 (2000)
48. A. Patanè, A. Levin, A. Polimeni, F. Schindler, L. Eaves, P. C. Main, and M. Henini
 “Piezoelectric effects in $In_{0.5}Ga_{0.5}As$ self-assembled quantum dots grown on (311)B GaAs substrates”
 Applied Physics Letters **77**, 2979 (2000)
47. L. Artús, R. Cuscó, S. Hernández, A. Patanè, A. Polimeni, M. Henini, and L. Eaves
 “Quantum-dot phonons in self-assembled $InAs/GaAs$ quantum dots: Dependence on the coverage thickness”
 Applied Physics Letters **77**, 3556 (2000)
46. T. P. Surkova, P. Kaczor, A. J. Zakrzewski, K. Swiatek, V. Y. Ivanov, M. Godlewski, A. Polimeni, L. Eaves, W. Giriat
 “Optical properties of $ZnSe$, $ZnCdSe$ and $ZnSSe$ alloys doped with iron”
 Journal of Crystal Growth **214**, 576 (2000)
45. S. Sanguinetti, G. Chiantoni, E. Grilli, M. Guzzi, M. Henini, A. Polimeni, A. Patanè, L. Eaves, and P. C. Main
 “3D island nucleation behaviour on high index substrates”
 Materials Science and Engineering B-Solid State Materials for Advanced Technology **74**, 239 (2000)

1999

44. Y. Atici, D. Cherns, A. Polimeni, M. Henini, L. Eaves
 “Characterization of InAs/GaAs QD structures by HREM and PL spectroscopy”
 Turkish Journal of Physics **23**, 709 (1999)
43. A. Patanè, A. Polimeni, L. Eaves, P. C. Main, R. K. Marshall, M. Henini, Yu. V. Dubrovskii, A. E. Belyaev, and G. Hill
 “Carrier dynamics in double barrier diodes incorporating quantum dots”
 Physica B **272**, 21 (1999)
42. A. Patanè, A. Polimeni, M. Henini, L. Eaves, P. C. Main and G. Hill
 “Thermal effects in quantum dot lasers”
 Journal of Applied Physics **85**, 625 (1999)
41. A. Polimeni, A. Patanè, M. Henini, L. Eaves, and P. C. Main
 “Temperature dependence of the optical properties of InAs/Al_yGa_{1-y}As self-organized quantum dots”
 Physical Review B **59**, 5064 (1999)
40. S. G. Lyapin, I. E. Itskevich, I. A. Trojan, P. C. Klipstein, A. Polimeni, L. Eaves, P. C. Main, M. Henini
 “Pressure-induced Γ-X crossover in self-assembled In(Ga)As/GaAs quantum dots”
 Physica Status Solidi (b) **211**, 79 (1999)
39. A. Patanè, M. Henini, A. Polimeni, L. Eaves, P. C. Main, M. Al-Khafaji and A. G. Cullis
 “Luminescence tuning of InAs/GaAs quantum dots grown on high-index planes”
 Superlattices and Microstructures **25**, 113 (1999)
38. A. Polimeni, A. Patanè, M. Henini, L. Eaves, P. C. Main, S. Sanguinetti and M. Guzzi
 “Influence of high-index GaAs substrates on the growth of highly-strained (InGa)As/GaAs heterostructures”
 Journal of Crystal Growth **201**, 276 (1999)
37. A. Patanè, A. Polimeni, M. Henini, L. Eaves, P. C. Main
 “In_{0.5}Ga_{0.5}As quantum dot lasers grown on (100) and (311)B GaAs substrates”
 Journal of Crystal Growth **201**, 1139 (1999)
36. A. Polimeni, A. Patanè, A. Thornton, T. Ihn, L. Eaves, P. Main, M. Henini and G. Hill
 “Optical and Resonant Tunneling Spectroscopy of Self-Assembled Quantum Dot Systems”
 Japanese Journal of Applied Physics Part II: Letters **38**, 535 (1999)
35. P. N. Brounkov, A. R. Kovsh, V. M. Ustinov, Y. G. Musikhin, N. N. Ledentsov, S. G. Konnikov, A. Polimeni, A. Patanè, P. C. Main, L. Eaves, and C. M. A. Kapteyn
 “Emission of electrons from the ground and first excited states of self-organized InAs GaAs quantum dot structures”
 Journal of Electronic Materials **28**, 486 (1999)
34. M. Henini, A. Polimeni, A. Patanè, L. Eaves, P. C. Main, and G. Hill
 “Effect of the substrate orientation on the self-organisation of (InGa)As/GaAs quantum dots”
 Microelectronics Journal **30**, 319 (1999)
33. S. Sanguinetti, A. Miotto, S. Castiglioni, E. Grilli, M. Guzzi, M. Henini, A. Polimeni, A. Patanè, L. Eaves, and P. C. Main
 “Optical and morphological properties of In(Ga)As/GaAs quantum dots grown on novel index surfaces”
 Microelectronics Journal **30**, 419 (1999)
32. A. Patanè, A. Polimeni, P.C. Main, M. Henini, and L. Eaves
 “High-temperature light emission from InAs quantum dots”
 Applied Physics Letters **75**, 814 (1999)
31. P.M. Smowton, E.J. Johnston, S.V. Dewar, P.J. Hulyer, H.D. Summers, A. Patanè, A. Polimeni, and M. Henini
 “Spectral Analysis of InGaAs/GaAs Quantum Dot Lasers”
 Applied Physics Letters **75**, 2169 (1999)
30. S. Sanguinetti, G. Chiantoni, E. Grilli, M. Guzzi, M. Henini, A. Polimeni, A. Patanè, L. Eaves, and P.C. Main
 “Substrate orientation dependence of island nucleation critical thickness in strained heterostructures”
 Europhysics Letters **47**, 701 (1999)

29. T. P. Surkova, M. Godlewski, K. Swiatek, P. Kaczor, A. Polimeni, L. Eaves, and W. Girit
 “*Intra-shell transitions of 3D metal ions (Fe, Co, Ni) in II-VI wide-gap semiconductor alloys*”
 Physica B **274**, 848 (1999)
28. M. Henini, P. N. Brounkov, A. Polimeni, S. T. Stoddart, P. C. Main, L. Eaves, A. R. Kovsh, Y. G. Musikhin, and S. G. Konnikov
 “*Electron and hole levels of InAs quantum dots in a GaAs matrix*”
 Superlattices and microstructures **25**, 105 (1999)

1998

27. A. Polimeni, S. T. Stoddart, M. Henini, L. Eaves, P. C. Main, K. Uchida, R. K. Hayden, and N. Miura
 “*Magneto-photoluminescence and electroluminescence spectroscopy of self-assembled (InGa)As quantum dots on high index planes*”
 Physica E **2**, 662 (1998)
26. R. K. Hayden, K. Uchida, N. Miura, A. Polimeni, S. T. Stoddart, M. Henini, L. Eaves, and P. C. Main
 “*High field Magnetoluminescence Spectroscopy of self-Assembled (InGa)As Quantum dots on high Index Planes*”
 Physica B **246**, 93 (1998)
25. R. K. Hayden, K. Uchida, N. Miura, A. Polimeni, S. T. Stoddart, M. Henini, L. Eaves, and P. C. Main
 “*Photoluminescence Spectroscopy of self-assembled (InGa)As quantum dots in high magnetic fields*”
 Physica B **251**, 262 (1998)
24. S. T. Stoddart, A. Polimeni, M. Henini, L. Eaves, P. C. Main, R. K. Hayden, K. Uchida and N. Miura
 “*Spectroscopic studies of self-assembled InAs and In_{0.5}Ga_{0.5}As quantum dots*”
 Applied Surface Science **123**, 366 (1998)
23. A. Patanè, M. G. Alessi, F. Intonti, A. Polimeni, M. Capizzi, F. Martelli, L. Nasi, L. Lazzarini, G. Salvati, A. Bosacchi and S. Franchi
 “*Self-aggregated InAs quantum dots in GaAs*”
 Journal of Applied Physics **83**, 5529 (1998)
22. R. P. Campion, J. R. Fletcher, P. J. King, S. M. Morley, A. Polimeni and R. G. Ormson
 “*Helical current flow along 90 degrees twist boundaries in YBCO thin films*”
 Superconductor Science & Technology **11**, 730 (1998)
21. S. C. Fortina, S. Sanguinetti, E. Grilli, M. Guzzi, M. Henini, A. Polimeni and L. Eaves
 “*InAs quantum dots grown on nonconventionally oriented GaAs substrates*”
 Journal of Crystal Growth **187**, 126 (1998)
20. M. Capizzi, A. Frova, M. G. Alessi, A. Patanè, A. Polimeni and F. Martelli
 “*In_xGa_{1-x}As/GaAs interfaces: From 2D islands to quantum dots*”
 Nuovo Cimento della Società Italiana di Fisica D-Condensed Matter **20**, 915 (1998)
19. P. N. Brounkov, A. Polimeni, S. T. Stoddart, M. Henini, L. Eaves, P. C. Main, A. R. Kovsh, Y. G. Musikhin and S. G. Konnikov
 “*Electronic structure of self-assembled InAs quantum dots in GaAs matrix*”
 Applied Physics Letters **73**, 1092 (1998)
18. A. Polimeni, M. Henini, A. Patanè, L. Eaves, P. C. Main and G. Hill
 “*Optical properties and device applications of (InGa)As self- assembled quantum dots grown on (311)B GaAs substrates*”
 Applied Physics Letters **73**, 1415 (1998)
17. A. E. Belyaev, L. Eaves, P. C. Main, A. Polimeni, S. T. Stoddart, M. Henini.
 “*Capacitance spectroscopy of single-barrier GaAs/AlAs/GaAs structures containing InAs quantum dots*”
 Acta Physica Polonica A **94**, 245 (1998)
16. S. Sanguinetti, S. C. Fortina, A. Miotto, E. Grilli, M. Guzzi, M. Henini, A. Polimeni, L. Eaves
 “*Self-aggregation of InAs quantum dots on (N11) GaAs substrates*”
 Thin Solid Films **336**, 9 (1998)

1997

15. A. Patanè, M. Grassi Alessi, A. Polimeni, M. Capizzi, F. Martelli, P. Borri, M. Gurioli, and M. Colocci
“*Formation and relaxation of exciton-carbon acceptor complexes in GaAs*”
Physical Review B **56**, 3834 (1997)
14. A. Patanè, M. Grassi Alessi, F. Intonti, A. Polimeni, M. Capizzi, F. Martelli, M. Geddo, A. Bosacchi and S. Franchi
“*Evolution of the optical properties of InAs/GaAs quantum dots for increasing InAs coverages*”
Physica Status Solidi A-Applied Research **164**, 493 (1997)
13. D. Orani, A. Polimeni, A. Patanè, M. Capizzi, F. Martelli, A. D'Andrea, N. Tomassini, P. Borri, M. Gurioli, and M. Colocci
“*Binding energy and lifetime of excitons in $In_xGa_{1-x}As/GaAs$ quantum wells*”
Physica Status Solidi A-Applied Research **164**, 107 (1997)

1996

12. A. Polimeni, A. Patanè, M. Capizzi, F. Martelli, L. Nasi, and G. Salviati
“*Self-aggregation of quantum dots for very thin InAs layers grown on GaAs*”
Physical Review B **53**, Rapid Communication 4213 (1996)
11. F. Martelli, A. Polimeni, A. Patanè, M. Capizzi, P. Borri, M. Gurioli, M. Colocci, A. Bosacchi, and S. Franchi
“*Exciton localization by potential fluctuation at the interface of InGaAs/GaAs quantum wells*”
Physical Review B **53**, 7421 (1996)
10. P. Borri, M. Gurioli, M. Colocci, F. Martelli, M. Capizzi, A. Patanè, and A. Polimeni
“*Photoinduced structures in the exciton luminescence spectrum of InGaAs/GaAs quantum well heterostructures*”
Journal of Applied Physics **80**, 3011 (1996)
9. A. Polimeni, A. Patanè, M. Grassi Alessi, M. Capizzi, F. Martelli, A. Bosacchi, and S. Franchi
“*Stokes shift in quantum wells: Trapping versus thermalization*”
Physical Review B **54**, 16389 (1996)

1995

8. A. Patanè, A. Polimeni, M. Capizzi and F. Martelli
“*Linewidth analysis of the photoluminescence of $In_xGa_{1-x}As/GaAs$ quantum wells ($x= 0.09, 0.18, 1.0$)*”
Physical Review B **52**, 2784 (1995)
7. M. Capizzi, F. Martelli, and A. Polimeni
“*InGaAs/GaAs Quantum Wells: a Standard Photoluminescence System?*”
Annales de Physique **20**, C2-183 (1995)
6. P. Borri, M. Gurioli, M. Colocci, F. Martelli, A. Polimeni, A. Patanè, and M. Capizzi
“*Excitation energy Dependence of the Optical Properties of InGaAs/GaAs Quantum Wells Heterostructures*”
Il Nuovo Cimento **17D**, 1383 (1995)

1994

5. M. Capizzi, A. Polimeni, A. Frova, F. Martelli, M. R. Bruni, and M.G. Simeone
“*Above Barrier Confinement in InGaAs/GaAs Multiple Quantum-Well Structures*”
Solid State Electronics **37**, 641, (1994)
4. A. Polimeni, D. Marangio, M. Capizzi, A. Frova, and F. Martelli
“*Giant Photoluminescence Enhancement in Deuterated Highly Strained InAs/GaAs Quantum Wells*”
Applied Physics Letters **65**, 1254 (1994)
3. M. Capizzi, A. Frova, A. Polimeni, D. Marangio F. Martelli, and A. Rudra
“*Deuterium in In-Based Quantum Wells*”
Superlattices and Microstructures **15**, 113 (1994)

2. M. Capizzi, A. Polimeni, B. Bonanni, V. Emiliani, A. Frova, D. Marangio and F. Martelli
“*Deuterium in InGaAs/GaAs Strained Quantum Wells: an Optically active Impurity*”
Semiconductor Science and Technology **9**, 2233 (1994)

1993

1. F. Martelli, M. Capizzi, A. Frova, A. Polimeni, F. Sarto, M. R. Bruni, and M.G. Simeone
“*Exciton confinement in GaAs quantum barriers*”
Physical Review B **48**, 1643 (1993)

Publications in Proceedings of International conferences

- 40c) Davide Spirito, Elena Blundo, Alessandro Surrente, Giorgio Pettinari, Tanju Yildirim, Carlos Alvarado Chavarin, Marco Felici, Antonio Polimeni, Leonetta Baldassarre
 “sSNOM characterization of the IR-active vibrational mode in highly strained hBN”
 2022 47th International Conference on Infrared, Millimeter and Terahertz Waves (IRMMW-THz)
- 39c) A Gerardino, S Birindelli, JS Wildmann, G Pettinari, L Businaro, A Polimeni, M Capizzi, S Rubini, F Martelli, A Rastelli, R Trotta, M Felici
 “Single photon emitters in dilute nitrides: Towards a determinist approach of quantum dot-photonic crystal nanocavity coupling”
 2015 17th International Conference on Transparent Optical Networks (ICTON), 2015, pp. 1-4
- 38c) G. Ciatto, A. Di Trolio, E. Fonda, P. Alippi, A. Polimeni, M. Capizzi, G. Varvaro, A. A. Bonapasta,
 ” Defect-induced Magnetism in Cobalt-doped ZnO Epilayers”
 AIP Conference Proceedings **1583**, 332 (2014)
- 37c) M. Felici, G. Pettinari, A. Polimeni. R. Carron, G. Lavenuta, E. Tartaglini, M. De Luca, A. Notargiacomo, D. Fekete, P. Gallo, B. Dwir, A. Rudra
 “Effects of hydrogen irradiation on the optical and electronic properties of site-controlled InGaAsN V-groove quantum wires”
 AIP Conference Proceedings **1566**, 5 (2013)
- 36c) Marta De Luca, Giorgio Pettinari, Antonio Polimeni, Mario Capizzi, Gianluca Ciatto, Lucia Amidani, Emiliano Fonda, Federico Boscherini, Francesco Filippone, Aldo Amore Bonapasta, Andreas Knübel, Volker Cimalla, Oliver Ambacher, Damiano Giubertoni, and Massimo Bersani
 ” Tuning of the Optical Properties of In-rich $In_xGa_{1-x}N$ ($x=0.82-0.49$) Alloys by Light-ion Irradiation at Low Energy”
 AIP Conference Proceedings **1566**, 93 (2013)
- 35c) G Salviati, L Lazzarini, N Armani, M Felici, A Polimeni, M Capizzi, F Martelli, S Rubini, A. Franciosi
 ” Controlled Band Gap Modulation of Hydrogenated Dilute Nitrides by SEM-Cathodoluminescence”
 Microscopy of Semiconducting Materials, Springer Proceedings in Physics 453,(2008)
- 34c) F. Masia, G. Pettinari, A. Polimeni, M. Felici, R. Trotta, M. Capizzi, T. Niebling, H. Günther, P. J. Klar, W. Stolz², A. Lindsay, E. P. O’Reilly, M. Piccin, G. Bais, S. Rubini, F. Martelli, and A. Franciosi
 ”Photoluminescence under magnetic field and hydrostatic pressure in $GaAs_{1-x}N_x$ for probing the compositional dependence of carrier effective mass and gyromagnetic ratio”
 XXVIII International Conference on the Physics of Semiconductors, AIP Conference Proceedings **893**, 157 (2007)
- 33c) G. Bisognin, D. De Salvador, E. Napolitani, M. Berti, A. Polimeni, M. Felici, M. Capizzi, M. Güngerich, P.J. Klar, G. Bais, F. Jabeen, M. Piccin, S. Rubini, F. Martelli, and A. Franciosi
 ”Evidence of a new hydrogen complex in dilute nitride alloys”
 XXVIII International Conference on the Physics of Semiconductors, AIP Conference Proceedings **893**, 155 (2007)
- 32c) M. Felici, A. Polimeni, A. Scordo, F. Masia, A. Frova, M. Capizzi, Y. Nabetani, T. Okuno, K. Aoki, T. Kato, T. Matsumoto, and T. Hirai
 ”Influence of the Host Lattice on the O-H Interaction in II-VI Semiconductors”
 XXVIII International Conference on the Physics of Semiconductors, AIP Conference Proceedings **893**, 327 (2007)
- 31c) M. Felici, R. Trotta, F. Masia,, A. Polimeni, A. Miriametro, M. Capizzi, P. J. Klar, and W. Stolz
 ”Investigation of Compositional Disorder in $GaAsN:H$ ”
 XXVIII International Conference on the Physics of Semiconductors, AIP Conference Proceedings **893**, 313 (2007)
- 30c) M. Felici, A. Polimeni, F. Masia, R. Trotta, G. Pettinari, M. Capizzi, G. Salviati, L. Lazzarini, N. Armani, M. Piccin, G. Bais, F. Martelli, S. Rubini, A. Franciosi, and L. Mariucci
 ”In-Plane Band Gap Engineering by Hydrogenation of Dilute Nitride Semiconductors”
 XXVIII International Conference on the Physics of Semiconductors, AIP Conference Proceedings **893**, 31 (2007)
- 29c) K. Hantke, S. Horst, K. Kohli, S. Chatterjee, P. J. Klar, W. Stolz, W. W. Rühle, F. Masia, G. Pettinari, A. Polimeni, and M. Capizzi
 “Time-Resolved Photoluminescence of Nitrogen-Cluster States in Dilute Ga(NAs)/GaAs Heterostructures”
 Conference on Lasers and Electro-Optics, 2007 CMN3
- 28c) Rinaldo Trotta, Antonio Polimeni, Marco Felici, Giorgio Pettinari, Mario Capizzi, Andrea Frova, Giancarlo Salviati, Laura Lazzarini, Nicola Armani, Luigi Mariucci, Giorgio Bais, Faustino Martelli, Silvia Rubini
 ”Hydrogen-induced Nitrogen Passivation in Dilute Nitrides: A Novel Approach to Defect Engineering”

- Mater. Res. Soc. Symposium Proceedings **994**, F02-08 (2006)
- 27c) M. Losurdo, M. M. Giangregorio, G. Bruno, T. -H. Kim, P. Wu, S. Choi, M. Morse, A. Brown, F. Masia, A. Polimeni, and M. Capizzi
 “Modification of InN properties by interactions with hydrogen and nitrogen”
 Mater. Res. Soc. Symposium Proceedings **892**, 155 (2006)
- 26c) A. Polimeni, A. Vinattieri, M. Zamfirescu, F. Masia and M. Capizzi
 “Carrier localization in (InGa)(AsN) alloys”
 Proceedings of SPIE - The International Society for Optical Engineering **5725**, 98 (2005)
- 25c) S. Mazzucato, D. Nardin, A. Polimeni, M. Capizzi, D. Granados, and J. M., García
 “Hydrogenation of stacked self-assembled InAs/GaAs quantum dots”
 (2005) AIP Conference Proceedings **772**, 621 (2005)
- 24c) M. Felici, A. Polimeni, M. Capizzi, S. V. Dudiy, A. Zunger, I. A. Buyanova, W. M. Chen, H. P. Xin, and C. W. Tu
 “High energy optical transitions in Ga(PN): Contribution from perturbed valence band”
 AIP Conference Proceedings **772**, 265 (2005)
- 23c) M. Felici, V. Cesari, A. Polimeni, A. Frova, M. Capizzi, Y. D. Choi, B. O. Y.-M. Yu, Y. Nabetani, Y. Ito, T. Okuno, T. Kato, T. Matsumoto, T. Hirai, I. K. Sou, and W. K. Ge
 “Effect of lattice ionicity on hydrogen activity in II-VI materials containing isoelectronic oxygen impurities”
 IEE Proc.-Optoelectron. **151**, 465 (2004)
- 22c) P. J. Klar, H. Gruning, L. Chen, T. Hartmann, D. Golde, M. Gungerich, W. Heimbrod, J. Koch, K. Volz, B. Kunert, T. Torunski, W. Stolz, A. Polimeni, M. Capizzi, G. Dumitras, L. Geelhaar, and H. Riechert
 “Unusual properties of metastable (Ga,In)(N,As) containing semiconductor structures”
 IEE Proceedings-Optoelectronics **150**, 28 (2003)
- 21c) A. Amore Bonapasta, F. Filippone, P. Giannozzi, M. Capizzi, and A. Polimeni
 “Hydrogen-nitrogen Complexes in GaAsN Alloys the Role of Doping in the Formation of Mono- and Di-hydrogen Complexes”
 Proceedings of the ICPS XXVI, (Edinburgh United Kingdom, 2002) P62 (2003)
- 20c) G. Baldassarri H. v. H., M. Bissiri, A. Polimeni, M. Capizzi, A. Amore Bonapasta, F. Jiang, M. Stavola, M. Fischer, M. Reinhardt, and A. Forchel
 “Hydrogen as a Probe of the Electronic and Lattice Properties of InGaAsN”
 Proceedings of the ICPS XXVI, (Edinburgh United Kingdom, 2002), G1.4 (2003)
- 19c) A. Augieri, G. Baldassarri H. v. H., M. Bissiri, M. Capizzi, A. Polimeni, I. K. Sou, and W. K. Ge
 “Hydrogen Passivation of Isoelectronic Impurities in ZnTeS”
 Proceedings of the ICPS XXVI, (Edinburgh United Kingdom, 2002), H46 (2003)
- 18c) M. Geddo, G. Guizzetti, R. Pezzuto, A. Polimeni, M. Capizzi, M. Bissiri, G. Baldassarri H. v. H., D. Gollub, and A. Forchel
 “Photoreflectance study of hydrogenated (InGa)(AsN)/GaAs heterostructures”
 Mater. Res. Soc. Symposium Proceedings **744**, 531-536 (2002)
- 17c) M. Capizzi, A. Polimeni, G. Baldassarri Höger von Högersthal, M. Bissiri, A. Amore Bonapasta, F. Jiang, M. Stavola, M. Fischer, A. Forchel, I. K. Sou and W. K. Ge
 “Photoluminescence and Infrared Absorption Study of Isoelectronic Impurity Passivation by Hydrogen”
 Mat. Res. Soc. Symp. Proc. **719**, 251 (2002)
- 16c) A. Levin, A. Patanè, F. Schindler, A. Polimeni, L. Eaves, P. C. Main, and M. Henini
 “Quantum-confined Stark shift in In_{0.5}Ga_{0.5}As self-assembled quantum dots grown on (100) and (311)B GaAs substrates”
 Proceedings of the 25th Conference on the Physics of Semiconductors p. 1217 (Osaka, Japan, 2001)
- 15c) A. Polimeni, M. Capizzi, M. Geddo, M. Fischer, M. Reinhardt, and A. Forchel
 “Temperature dependence of light emission and absorption in (InGa)(AsN)/GaAs single quantum wells”
 Proceedings of the 25th Conference on the Physics of Semiconductors p. 539 (Osaka, Japan, 2001)
- 14c) A. Patanè, A. Polimeni, Yu. V. Dubrovskii, P. N. Brounkov, A. E. Belyaev, R. K. Marshall, L. Eaves, P. C. Main, M. Henini, G. Hill
 “How is resonant tunnelling affected by self-assembled quantum dots?”
 IOP Conference Series **166**, 131 (2000)
- 13c) A. Patanè, A. Polimeni, A. Levin, L. Eaves, P. C. Main, M. Henini, P. M. Smowton, G. Hill
 “(InGa)As/(AlGa)As self-assembled quantum dots: optical properties and laser applications”

IOP Conference Series **166**, 247 (2000)

12c) S. Sanguinetti, S. C. Fortina, A. Miotto, E. Grilli, M. Guzzi, M. Henini, A. Polimeni, L. Eaves
 “Self-aggregation of InAs quantum dots on (N11) GaAs substrates”
 European Materials Research Society Symposia-Proceedings **79**, 9 (1999)

11c) A. Patanè, A. Polimeni, M. Henini, L. Eaves, P.C. Main
 “Energy emission tuning of InAs/GaAs self-assembled quantum dots by growth interruption”
 IOP Conference Series **162**, 451 (1999)

10c) A. Patanè, A. Polimeni, M. Henini, L. Eaves, P.C. Main, and G. Hill
 “Laser properties of (InGa)As/GaAs self-assembled quantum dots grown on high-index planes”
 IOP Conference Series **162**, 439 (1999)

9c) A. Polimeni, M. Henini, R. K. Hayden, L. Eaves, P. C. Main, D. Cherns, Y. Atici, K. Uchida and N. Miura
 “Effect of the natural substrate patterning on the growth of (InGaAs)/GaAs self-assembled quantum dots: microscopic and optical studies”
 Proceedings of the 24th Conference on the Physics of Semiconductors (Jerusalem, Israel, 1998)

8c) P. N. Brounkov, A. R. Kovsh, Y. G. Musikhin and S. G. Konnikov, M. Henini, A. Polimeni, S. T. Stoddart, , L. Eaves, P. C. Main
 “Electronic structure of self-assembled InAs quantum dots in GaAs matrix”
 Proceedings of the 24th Conference on the Physics of Semiconductors (Jerusalem, Israel, 1998)

7c) S. G. Lyapin, I. E. Itskevich, I. A. Trojan, P. C. Klipstein, L. Eaves, P. C. Main, M. Henini and A. Polimeni.
 “Photoluminescence study of self-assembled InAs/GaAs quantum dots under pressure”
 Proceedings of the 24th Conference on the Physics of Semiconductors (Jerusalem, Israel, 1998)

6c) A. Polimeni, M. Henini, L. Eaves, S. T. Stoddart, P. C. Main, K. Uchida, R. K. Hayden, and N. Miura
 “Optical and Microscopic Properties of In_{0.5}Ga_{0.5}As/GaAs highly strained heterostructures”
 Proceedings of Physics Conferences Series (Institute of Physics), 1997, no. 156 page 519.

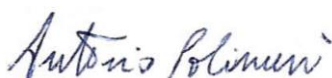
5c) J. R. Fletcher, P. J. King, A. Polimeni, R. P. Champion, and S. M. Morley
 “Helical current flow at the boundary between two tilted anisotropic conductors: 90° YBCO twist boundaries”
 Institute of Physics Conferences Series (Institute of Physics), 1997, no. **158**, page 245

4c) A Polimeni, M Henini, L Eaves, ST Stoddart, PC Main, RK Hayden, K Uchida, N Miura
 “Optical and microscopic properties of In_{0.5}Ga_{0.5}As/GaAs highly strained heterostructures”
 Proceedings of the IEEE Twenty-Fourth International Symposium on Compound Semiconductors p. 519 (1997)

3c) A. Patanè, A. Polimeni, F. Martelli, M. Capizzi, L. Lazzarini, L. Nasi, and G. Salviati
 “Absence of a critical thickness for the self-aggregation of quantum dots in InAs/GaAs quantum wells”
 Proceedings of the 23rd Conference on the Physics of Semiconductors, page 1305, XXIII ICPS, Berlin, Germany, (1996)

2c) M. Capizzi, A. Frova, D. Marangio, A. Polimeni and F. Martelli
 “Photoluminescence of InAs/GaAs Near-Monolayer Quantum Wells Before and After Deuterium Irradiation”
 Proceedings of the 22nd Conference on the Physics of Semiconductors, page 1149, XXII ICPS, Vancouver, Canada, (1994)

1c) F. Martelli, M. Capizzi, A. Frova, A. Polimeni, F. Sarto, M. R. Bruni, and M.G. Simeone
 “Exciton Modes in Quantum Barriers”
 Society of PhotoOptical Instrumentation Engineers **1985**, 376 (1993)



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