europass Curriculum vitae

PERSONAL INFORMATION Elena Blundo

elena.blundo@uniroma1.it

Nationality Italian

ACADEMIC CAREER

Feb 2023 – Jan 2024 Research Associate position

Sapienza, University of Rome

One-year Research Associate position at the *Optical Spectroscopy of Nanostructured Materials laboratory* (Prof. Antonio Polimeni), under the project *Hybrid perovskite nanowires for laser application*.

EDUCATION

Nov 2019 – Jan 2023 PhD student in Physics

Sapienza, University of Rome

The candidate was a PhD student at the *Optical Spectroscopy of Nanostructured Materials laboratory* under the supervision of Prof. Antonio Polimeni.

The candidate defended her PhD thesis on 30 January 2023.

Thesis: *Dome-shaped two-dimensional crystals: A playground for the study of the crystal mechanical and optoelectronic properties*.

Mark: **Optimum cum laude**

Apr 2019 – Oct 2019 Research Scholarship

Sapienza, University of Rome

6-month Research Scholarship concerning the "Interferometric analysis of the structural properties of curved nano-membranes made of two-dimensional crystals" at the *Optical Spectroscopy of Nanostructured Materials laboratory* under the supervision of Prof. Antonio Polimeni.

The candidate's research activity consisted in the spectroscopic characterisation of Fabry-Perót cavities based on two-dimensional membranes.

Sep 2017 – Mar 2019 Master's Degree in Physics

Sapienza, University of Rome

Thesis: *Electronic properties of two-dimensional crystals under strain fields*, under the supervision of Prof. Antonio Polimeni.

Mark: **110/110 cum laude**

The candidate accomplished her Master's Degree in 1 year and a half (thesis defended on 25 March 2019), **in advance with respect to the 2-years legal duration**.

Sep 2014 – Oct 2017

Bachelor's Degree in Physics & Path of Excellence

Sapienza, University of Rome

Thesis: *Mechanical deformations of two-dimensional materials*, under the supervision of Prof. Antonio Polimeni.

Mark: **110/110 cum laude**

The candidate also accomplished the **Path of excellence of the Bachelor in Physics.**

a.y. 2013/2014

Scientific high school diploma

Liceo Scientifico Ettore Majorana, Rome

Mark: **100/100 cum laude**

TEACHING AND TUTORSHIPS

During the Master's Degree and PhD, the candidate accomplished in total **240 hours** of tutorship activity.

a.y. 2021/22, II semester

Tutorship activity

Physics Department of Sapienza, University of Rome

40 hours of tutorship activity in the Bachelor's Degree in Physics. The candidate was a teaching assistant for the Mechanics Course. Specifically, the candidate supported students in the preparation for the written exam through exercise classes.

a.y. 2021/22, I semester

Tutorship activity

Physics Department of Sapienza, University of Rome

40 hours of tutorship activity in the Bachelor's Degree in Biotechnology. The candidate is a teaching assistant for the Physics Course. Specifically, the candidate helped the students through online meetings aimed at revising notions of Mechanics, Thermodynamics, Electromagnetism and Optics, and at doing exercises.

a.y. 2020/21, II semester

Tutorship activity

Physics Department of Sapienza, University of Rome

80 hours of tutorship activity in Bachelor's degree courses during the academic year 2020/2021. The candidate was a teaching assistant for the Mechanics Laboratory Course, helping in the preparation of the laboratory experiences and helping students prepare for the exam.

a.y. 2019/20, II semester

Tutorship activity

Physics Department of Sapienza, University of Rome

40 hours of tutorship activity in Bachelor's degree courses during the academic year 2019/2020. The candidate was a teaching assistant for the Mechanics Laboratory Course, helping in the preparation of the laboratory experiences and helping students prepare for the exam.

a.y. 2018/19, I semester

Tutorship activity

Physics Department of Sapienza, University of Rome

40 hours of tutorship activity concerning *support activities for Italian students attending courses in English, and having difficulties in the comprehension of the English language*.

SUPERVISING

Supervisor activity

Physics Department of Sapienza, University of Rome

The candidate has co-supervised the research activity of several Master's students:

a.y. 2022/2023 Co-supervisor of the Master's Degree student Federico Tuzi.

a.y. 2021/2022 Co-supervisor of the laboratory activity of the Master's students Mattia Capeccia, Valerio Tammurello and Riccardo Torrente within the Physics Laboratory II course.

a.y. 2021/2022 Co-supervisor of the internship activity (16 weeks) of the student Djero Peeters, from the Eindhoven University of Technology.

a.y. 2021/2022 Co-supervisor of the internship activity (8 months) of the Erasmus student Eirini Parmenopoulou, from the Aristotle University of Thessaloniki.

a.y. 2020/2021 Co-supervisor of the Master's Degree student Salvatore Cianci. Thesis: *Effects of h-BN capping of two-dimensional crystals*. Mark 110/110 cum laude.

a.y. 2020/2021 Co-supervisor of the Master's Degree student Marzia Cuccu. Thesis: *Fabrication and optical spectroscopy of two-dimensional van der Waals heterostructures*. Mark 110/110 cum laude.

a.y. 2020/2021 Co-supervisor of the laboratory activity of the Master's students Giorgio Contestabile and Federico Tuzi within the Physics Laboratory II course.

AWARDS

2022 **Nano Letters Seed Grant** (Europe, Australia and New Zealand region) for later-stage graduate students.

2022 **'Graphene 2022' conference Travel Grant** for PhD students.

2022 **Nanomaterials 2022 Travel Award** for PhD and post docs sponsored by the open access journal Nanomaterials published by MDPI.

2022 **Materials 2022 Travel Award** for PhD and post docs sponsored by the open access journal Materials published by MDPI.

2021 **Prize "Michele Cantone"** for *young graduated students* by the Italian Physical Society.

2020 Communication selected among the *Best Communications* at the 106° national conference by the Italian Physical Society.

2019 First prize for the **Best oral communication** at the 105° national conference (Physics of Matter section) by the Italian Physical Society.

CONTESTS

a.y. 2019/20 Winner and ranked 1st in the contest for the PhD in Physics.

a.y. 2019/20 Winner and ranked 1st in the contest for the PhD in Mathematical Models for Engineering, Electromagnetism and Nanosciences.

GRANTS AND FUNDING

2022 ### Grant (role: PI)

Nano Letters Seed Grant – Europe, Australia and New Zealand region (https://axial.acs.org/2022/03/15/nano-letters-seed-grants/ and https://pubs.acs.org/doi/full/10.1021/acs.nanolett.2c03880)

Project: "*Engineering quantum emitters at telecom wavelengths from strained 2D crystals*"

Funding = 2500 $.

2022 **Grant (role: PI)**

Sapienza, University of Rome

Avvio alla Ricerca Tipo II 2022

Project: "*electrical Devices based on InnOvative van Der waals hEterostructures - DIODE*".

Funding = 4000 €.

2022 **Research Project (role: PI)**

European Magnetic Field Laboratory (EMFL), ISABEL project

Step 1: Magnet time at the University of Warsaw, Poland, under the proposal *Spin and valley physics of quantum emitters in strained 2D materials* (ref. number NSC07-221) presented by the candidate. The proposal was approved by the EMFL and the experiment was performed in July 2022.

2021 **Grant (role: PI)**

Sapienza, University of Rome

Avvio alla Ricerca Tipo I 2021

Project "*Tuneable lIGht Emission fRom flexible, atomIcally-thin SandwicHes - a TIGERISH project*".

Funding = € 1600.

2021 **Research Project (role: PI)**

European Magnetic Field Laboratory (EMFL), ISABEL project

Step 1: Magnet time at the University of Warsaw, Poland, under the proposal *Strain tuning of the spin/valley physics of k-space direct and indirect excitons in transition-metal dichalcogenides* (ref. number NSC01-121) presented by the candidate. The proposal was approved by the EMFL and the experiment was performed in September 2021.

Step 2: Magnet time at the High Field Magnet Laboratory (HFML), Nijmegen, The Netherlands. The report on the first step was approved by the EMFL and further experiments at higher fields were performed in November 2022 at the HFML.

2020 **Grant (role: PI)**

Sapienza, University of Rome

Avvio alla Ricerca Tipo I 2020

Project "*AssembLing and mEchanically-strainiG nOvel promisinG heterostructures mAde of two-diMensional matErials - LEGO GAME*".

Funding = € 1600.

Nov 2019 – Oct 2020 **Research Associate position during the PhD**

Sapienza, University of Rome; funding from Regione Lazio, Sinfonia Project

One-year Research Associate position for the *Realisation and characterisation of quantum dots and optical circuits on semiconductors*.

The project was carried out during the 1st year of PhD.

2018 **Research Project (role: participant)**

European Magnetic Field Laboratory (EMFL)

Magnet time at the High Field Magnet Laboratory (HFML) in Nijmegen, The Netherlands, under the proposal *Probing the direct/indirect band gap structure of mechanically deformed WS2 single layers* (ref. number NSC10-118). The proposal was approved by the EMFL and the experiment was performed in October-November 2019.

ABROAD EXPERIENCES

5 weeks

University of Warsaw, Poland

During her PhD and post-doc, the candidate carried out two research projects (NSC01-121 and NSC07-221) at the University of Warsaw, in the group led by Profs. Maciej Molas and Adam Babin´ski, to perform optical measurements on semiconductor nanostructures under magnetic fields up to 16 T.

4 weeks

High Field Magnet Laboratory (HFML), The Netherlands

During her first year as a PhD student, the candidate spent 2 weeks at the High Field Magnet Laboratory (HFML, in Nijmegen, The Netherlands) as participant of the project NSC10-118. The candidate is currently spending two more weeks at the HFML to carry out research related to her proposal NSC01-121. The HFML is an international facility which uses and develops high magnetic fields to carry out pioneering scientific research by in-house and external users. Fields up to 37.5 T are currently available there. The candidate performed magneto-optical measurements on semiconductor nanostructures under high magnetic fields up to 30 T.

ORGANISATION OF EVENTS

2023 **Researcher's Night** 13 May 2023 at Sapienza University of Rome. The candidate helped with guided tours to the lab.

2022 **Exhibit "Dire l'indicibile"** from 31 March to 8 April 2022 at Sapienza University of Rome, organised for the *Italian quantum weeks*. The candidate collaborated to the exhibit organisation and guided tours. The organisation was chaired by the "Quantum Lab" group at La Sapienza.

https://sites.google.com/uniroma1.it/sapienzaquantumweeks/home-page?authuser=0

2021 **Workshop 2Day**, held on 17-18 June 2021 at Sapienza, University of Rome. The candidate was a member of the organisation committee chaired by Prof. Antonio Polimeni.

https://2d-meeting.weebly.com/

REVIEW ACTIVITY

The candidate is a referee for the APS journals Physical Review Letters, Physical Review Research, Physical Review B, Physical Review Materials.

ATHLETIC CAREER

The candidate is also a Taekwondo Poomsae and Freestyle athlete, black belt, IV dan. The candidate is a **11-time National Champion** and an **International player of the National Team Italy**. Her international career has started in 2010 and since then she has conquered numerous medals at European and World competitions (the palmares is shown at the end of the CV). To date, she is the only Italian athlete who has ever conquered a medal (Silver medal in 2012) at the World Poomsae Championships in an individual junior division. She is also a coach and national referee. In 2022, she was nominated **Head Coach of the National Poomsae Team, Youth sector** (see https://www.taekwondoitalia.it/news/2004-nomine-nazionali-fita.html). She is the first woman and the youngest person to ever lead the National Team in the history of Italian Taekwondo. The candidate was also appointed as **Head Coach of the Taekwondo Demo Team Italia**, the first ever western (*i.e.*, non-korean) demonstration team.

Since 2010, the candidate has carried out in parallel her student/academic career and her sport (as an athlete, referee and coach) career.

OUTREACH ACTIVITY

CONI Projects

The candidate was involved in several projects on the interplay between sport and education. In particular, for 2 years the CONI (the Italian Olympic Committee) made her join the project *Champions in life and sport*. Within this project, the candidate shared her experience in life and sport with young students (10-14 years) in secondary schools to promote sport values and highlight the importance of education.

Physics and Taekwondo The candidate released several interviews and wrote informative articles on the interplay between sport and education, and in particular between Taekwondo and Physics.

Press releases:

- *Informative article for 'The Olympic Dream', the journal of the Italian Taekwondo Federation, volume 2, 2022*
- *Informative article for 'Prima pagina', the journal of the Italian Physical Society*: https://www.primapagina.sif.it/article/1376/i-segreti-del-taekwondo-tra-ambizione-creativita-e-fisica#.Yc4sc9DMJPY
- *Interview to 'StaR', scientific magazine of Sapienza*: https://www.stoccolmaaroma.it/2021/tra-fisica-e-taekwondo-intervista-a-elena-blundo/
- *Interview to the national journal 'La Gazzetta dello Sport'*: https://www.gazzetta.it/taekwondo/22-08-2020/blundo-taekwondo-fisica-sogno-diventare-ricercatrice-ma-3801356422259.shtml

PERSONAL SKILLS

Mother tongue Italian

Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1

Levels: A1 and A2: Basic user – B1 and B2: Independent user – C1 and C2: Proficient user
Common European Framework of Reference for Languages

Team work The candidate has worked in various types of teams. In the research field, she had the possibility to collaborate with many other research groups (in Italy, UK, Germany, Poland, The Netherlands, Australia and US). In sport, her activity concerns both individual and group practice. The candidate is also Head Coach of the Italian Taekwondo Demonstration Team, which requires remarkable attitude to work in a team.

Managerial skills The candidate has gained remarkable experience as manager and leader. In the research field, she co-supervised the research activity of many students (see above "Supervisor activity") and gained experience as tutor. In sport, she is a coach since 2015 and has led the society "Sporting Club Nuovo Laurentino" since 2018. She led the Lazio Regional team from 2019 to 2021, and in 2022 she was nominated Head Coach of the National Poomsae Team - Youth sector, and Head Coach of the "Taekwondo Demo Team Italia", the first ever western (*i.e.*, non-korean) demonstration team. She is thus currently holding two among the most prestigious managerial roles within the Italian Taekwondo Federation.

Computer skills
- competent with most Microsoft Office programs and with LateX
- programming experience in the c language

RESEARCH TRACK RECORD

The candidate is author of **33** peer-reviewed papers.

h-factor: **12** (Scholar), **11** (Scopus), **11** (WoS).

Citations: **579** (Scholar), **458** (Scopus), **445** (WoS).

Average citations per publication*: **16.5** (Scholar), **13.9** (Scopus), **13.5** (WoS).

*calculated over the no. of publications currently recognised by the database (35, Scholar; 33, Scopus; 33, WoS)

Total impact factor (IF): **276.3**

Average IF per publication: **8.6**

Average IF per year (from Sep 2019 to Dec 2023): **63.8**

Papers as first author: **11** (**33 %**)

Papers as first or second author: **22** (**67 %**)

PUBLICATIONS

—— 2023 ——

33. Jessica S. Lemos, Elena Blundo, Antonio Polimeni, Marcos A. Pimenta, and Ariete Righi
Exciton–Phonon Interactions in Strained Domes of Monolayer MoS_2 Studied by Resonance Raman Spectroscopy
Nanomaterials **13**, 2722 (2023). [IF 2022: 5.3]

32. 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, and Deborah Prezzi
Dielectric Response and Excitations of Hydrogenated Free-standing Graphene
Carbon Trends **12**, 100274 (2023). [IF: /]

31. Boqing Liu, Tanju Yildirim, Elena Blundo, Domenico de Ceglia, Ahmed Khan, Zongyou Yin, Hieu T. Nguyen, Giorgio Pettinari, Marco Felici, Antonio Polimeni, and Yuerui Lu
Extraordinary Second Harmonic Generation modulated by Divergent Strain Field in Pressurized Monolayer Domes
Applied Physics Reviews **10**, 021414 (2023). [IF 2022: 15.0]

30. Salvatore Cianci, Elena Blundo, Federico Tuzi, Giorgio Pettinari, Katarzyna Olkowska-Pucko, Eirini Parmenopoulou, Djero B. L. Peeters, Antonio Miriametro, Takashi Taniguchi, Kenji Watanabe, Adam Babin´ski, Maciej R. Molas, Marco Felici, and Antonio Polimeni
Spatially controlled single photon emitters in hBN-capped WS_2 domes
Advanced Optical Materials, DOI: 10.1002/adom.202202953 (2023). [IF 2022: 9.0]

29. Lorenza Romagnoli, Andrea D'Annibale, Elena Blundo*, Atanu Patra, Antonio Polimeni, Daniele Meggiolaro*, Iryna Adrusenko, Danilo Marchetti, Mauro Gemmi*, and Alessandro Latini*
* co-corresponding authors
4,4'-(anthracene-9,10-diylbis(ethyne-2,1-diyl))bis(1-methyl-1-pyridinium) lead iodide $C_{30}H_{22}N_2Pb_2I_6$: a highly luminescent, chemically and thermally stable one-dimensional hybrid iodoplumbate
Chemistry of Materials **35**, 1818 (2023). [IF 2022: 8.6]

28. Boqing Liu, Tanju Yildirim, Tieyu Lü, Elena Blundo, Li Wang, Lixue Jiang, Hongshuai Zou, Lijun Zhang, Huijun Zhao, Zongyou Yin, Fang-Bao Tian, Antonio Polimeni, and Yuerui Lu
Variant Plateau's Law in Atomically Thin Transition Metal Dichalcogenide Dome Networks
Nature Communications **14**, 1050 (2023). [IF 2022: 16.6]

27. Arkadeb Pal, Khyati Anand, TW Yen, Atanu Patra, A Das, SM Huang, Elena Blundo, Antonio Polimeni, HD Yang, Sandip Chatterjee
Magnetic properties and coupled spin-phonon behavior in quasi-one-dimensional screw-chain compound $BaMn_2V_2O_8$
Physical Review Materials **7**, 014402 (2023). [IF 2022: 3.4]

26. Katarzyna Olkowska-Pucko, Elena Blundo, Natalia Zawadzka, Salvatore Cianci, Diana Vaclavkova, Piotr Kapus´cin´ski, Dipankar Jana, Giorgio Pettinari, Marco Felici, Karol Nogajewski, Miroslav Bartos, Kenji Watanabe, Takashi Taniguchi, Clement Faugeras, Marek Potemski, Adam Babin´ski, Antonio Polimeni, and Maciej R. Molas
Excitons and trions in WSSe monolayers
2D Materials **10**, 015018 (2023). [IF 2022: 5.5]

—— 2022 ——

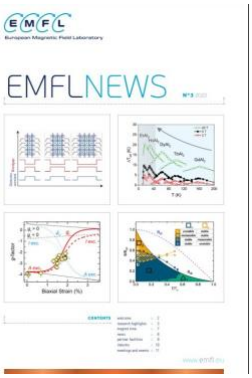
25. Lorenza Romagnoli, Andrea D'Annibale, Elena Blundo*, Antonio Polimeni, Alberto Cassetta*, Giuseppe Chita, Riccardo Panetta, and Alessandro Latini*
* co-corresponding authors
Synthesis, structure and characterization of 4,4'-(anthracene-9,10-diylbis(ethyne-2,1-diyl))bis(1-methyl-1-pyridinium) bismuth iodide $(C_{30}H_{22}N_2)_3Bi_4I_{18}$, an air, water and thermally stable 0D hybrid perovskite with high photoluminescence efficiency,
Crystal Growth & Design **22**, 7426 (2022). [IF 2022: 3.8]

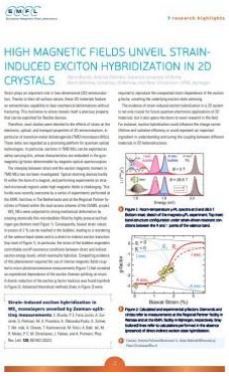
24. Maria Grazia Betti, Elena Blundo, Marta De Luca, Marco Felici, Riccardo Frisenda, Yoshikazu Ito, Samuel Jeong, Dario Marchiani, Carlo Mariani, Antonio Polimeni, Marco Sbroscia, Francesco Trequattrini, Rinaldo Trotta,

Homogeneous Spatial Distribution of Deuterium Chemisorbed on Free-Standing Graphene, Nanomaterials **12**, 2613 (2022). [IF 2022: 5.3]

23. 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 Patané
The Reaction of SnS_2 with H_2 as a Method to Produce SnS_2/SnS Heterostructures for Hydrogen Technologies and Beyond
Small **18**, 2202661 (2022). [IF 2022: 13.3]

22. Elena Blundo*, Paulo E. Faria Junior*, Alessandro Surrente, Giorgio Pettinari, Mikhail A. Prosnikov, Katarzyna Olkowska-Pucko, Klaus Zollner, Tomasz Woz´niak, Andrey Chaves, Tomasz Kazimierczuk, Marco Felici, Adam Babin´ski, Maciej R. Molas, Peter C. M. Christianen, Jaroslav Fabian, and Antonio Polimeni*,
* co-corresponding authors
Strain-induced exciton hybridization in WS_2 monolayers unveiled by Zeeman splitting measurements
Physical Review Letters **129**, 067402 (2022). [IF 2022: 8.6]





Media/press releases:
• https://emfl.eu/emflwebsite/wp-content/uploads/2022/11/emfl_newsletter_n3_22_web.pdf

21. Cinzia Di Giorgio†, Elena Blundo†, Giorgio Pettinari, Marco Felici, Fabrizio Bobba, and Antonio Polimeni
Mechanical, elastic and adhesive properties of two-dimensional materials: From straining techniques to state-of-the-art local probe measurements
† co-first authors
Advanced Materials Interfaces **9**, 2102220 (2022). [IF 2022: 5.4]

20. 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, and Carlo Mariani*
Gap opening in double side highly hydrogenated free standing graphene
Nano Letters **22**, 2971 (2022). [IF 2022: 10.8]

19. Salvatore Cianci, Elena Blundo, Marco Felici, Antonio Polimeni, and Giorgio Pettinari
Tailoring the optical properties of 2D transition metal dichalcogenides by strain
Optical materials **125**, 112087 (2022). [IF 2022: 3.9]

18. Elena Blundo, Alessandro Surrente, Davide Spirito, Giorgio Pettinari, Tanju Yildirim, Carlos Alvarado Chavarin, Leonetta Baldassarre, Marco Felici, and Antonio Polimeni
Vibrational properties in highly strained hexagonal boron nitride bubbles
Nano Letters **22**, 1525 (2022). [IF 2022: 10.8]

17. Arkadeb Pal, T. W. Kuo, Chia-Hsiu Hsu, D. C. Kakarla, Ajay Tiwari, M. C. Chou, Atanu Patra, P. Yanda, Elena Blundo, Antonio Polimeni, A. Sundaresan, F. C. Chuang, and 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). [IF 2022: 3.7]

16. Diego Di Girolamo, Elena Blundo, Giulia Folpini, Corinna Ponti, Guixiang Li, Mahmoud Aldamasy, Zafar Iqbal, Jorge Pascual, Giuseppe Nasti, Meng Li, Roberto Avolio, Olga Russina, Alessandro Latini, Fahad Alharthi, Marco Felici, Annamaria Petrozza, Antonio Polimeni, and Antonio Abate

Energy distribution in tin halide perovskite
Solar RRL **6**, 2100825 (2022). [IF 2022: 7.9]

15. Francesco Filippone, Saeed Younis, Giuseppe Mattioli, Marco Felici, Elena Blundo, Antonio Polimeni, Giorgio Pettinari, Damiano Giubertoni, Eduard Sterzer, Kerstin Volz, Dan Fekete, Alok Rudra, Eli Kapon, and Aldo Amore Bonapasta
Selective effects of the host matrix in hydrogenated InGaAsN alloys: a new defect engineering paradigm.
Advanced Functional Materials **32**, 2108862 (2022). [IF 2022: 19.0]

—— 2021 ——

14. Cinzia Di Giorgio, Elena Blundo, Giorgio Pettinari, Marco Felici, Antonio Polimeni, and Fabrizio Bobba
Exceptional elasticity of micro-scale constrained MoS_2 domes
ACS Applied Materials and Interfaces **13**, 48228 (2021). [IF 2021: 10.383]

13. Elena Blundo*, Cinzia Di Giorgio, and Giorgio Pettinari
* corresponding author
Bubble formation in van der Waals crystals: A platform for fundamental studies
Il Nuovo Cimento C **44**, 1 (2021), Invited Paper. [IF 2021: 0.252]

12. Elena Blundo*, Tanju Yildirim, Giorgio Pettinari, and Antonio Polimeni*
* co-corresponding authors
Experimental Adhesion energy in van der Waals crystals and heterostructures from atomically-thin bubbles
Physical Review Letters **127**, 046101 (2021). [IF 2021: 9.185]

11. Elena Blundo, Antonio Polimeni, Daniele Meggiolaro, Andrea D'Annibale, Lorenza Romagnoli, Marco Felici, and Alessandro Latini
Brightly Luminescent and Moisture Tolerant Phenyl-Viologen Lead Iodide Perovskites for Light Emission Applications
The Journal of Physical Chemistry Letters **12**, 5456 (2021). [IF 2021: 6.888]

10. Elena Blundo, Emmanuele Cappelluti, Marco Felici, Giorgio Pettinari and Antonio Polimeni
Strain-tuning of the electronic, optical, and vibrational properties of two-dimensional crystals
Applied Physics Reviews **8**, 021318 (2021). [IF 2021: 19.527]

9. Mahmoud M. S. Abdelnabi, Chiara Izzo, Elena Blundo*, Maria Grazia Betti, Marco Sbroscia, Giulia Di Bella, Gianluca Cavoto, Antonio Polimeni, Isabel Garcia-Cortes, Isabel Rucandio, Alejandro Moroño, Kailong Hu, Yoshikazu Ito, and Carlo Mariani*
* co-corresponding authors
Deuterium Adsorption on Free-Standing Graphene
Nanomaterials **11**, 130 (2021). [IF 2021: 5.719]

8. Mahmoud M. S. Abdelnabi, Elena Blundo, Maria Grazia Betti, Gianluca Cavoto, Ernesto Placidi, Antonio Polimeni, Alessandro Ruocco, Kailong Hu, Yoshikazu Ito, and Carlo Mariani
Towards Free-Standing Graphane: Atomic Hydrogen and Deuterium Bonding to Nano-Porous Graphene
Nanotechnology **32**, 035707 (2021). [IF 2021: 3.953]

—— 2020 ——

7. Cinzia Di Giorgio, Elena Blundo, Giorgio Pettinari, Marco Felici, Yuerui Lu, Anna Maria Cucolo, Antonio Polimeni, and Fabrizio Bobba
Nano-scale measurements of elastic properties and hydrostatic pressure in H_2-bulged MoS_2 membranes
Advanced Materials Interfaces **7**, 2001024 (2020). [IF 2020: 6.147]

6. Elena Blundo
Proton-induced straining of two-dimensional crystals
Il Nuovo Cimento C **43**, 112 (2020), Invited paper. [IF 2020: 0.288]

5. Davide Tedeschi, H. Aruni Fonseka, Elena Blundo, Andrés Granados del Aguila, Yanan Guo, Hark H Tan, Peter CM Christianen, Chennupati Jagadish, Antonio Polimeni, and Marta De Luca
   Hole and Electron Effective Masses in Single InP Nanowires with a Wurtzite-Zincblende Homojunction
   ACS Nano **14**, 11613 (2020). [IF 2020: 15.881]

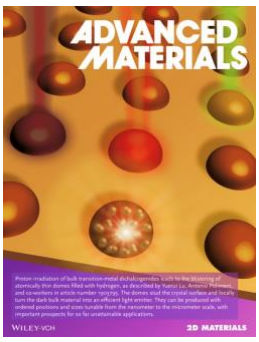
4. Elena Blundo*, Cinzia Di Giorgio, Giorgio Pettinari, Tanju Yildirim, Marco Felici, Yuerui Lu, Fabrizio Bobba, and Antonio Polimeni*
   * co-corresponding authors
   Engineered creation of periodic giant, non-uniform strains in MoS_2 monolayers
   Advanced Materials Interfaces **7**, 2000621 (2020). [IF 2020: 6.147]

3. James Felton, Elena Blundo, Sanliang Ling, Joseph Glover, Zakhar R. Kudrynskyi, Oleg Makarovsky, Zakhar D. Kovalyuk, Elena Besley, Gavin Walker, Antonio Polimeni, and Amalia Patanè
   The Interaction of Hydrogen with the van der Waals Crystal γ-InSe
   Molecules **25**, 2526 (2020). [IF 2020: 4.411]

2. Elena Blundo, Marco Felici, Tanju Yildirim, Giorgio Pettinari, Davide Tedeschi, Antonio Miriametro, Boqing Liu, Wendi Ma, Yuerui Lu, and Antonio Polimeni
   Evidence of the direct-to-indirect band gap transition in strained two-dimensional WS_2, MoS_2, and WSe_2
   Physical Review Research **2**, 012024 (2020). Rapid Communication. [IF 2020: /]

—— 2019 ——

1. Davide Tedeschi†, Elena Blundo†, Marco Felici, Giorgio Pettinari, Boqing Liu, Tanju Yildirim, Elisa Petroni, Chris Zhang, Yi Zhu, Simona Sennato, Yuerui Lu, and Antonio Polimeni
   † co-first authors
   Controlled micro/nano-dome formation in proton-irradiated bulk transition-metal dichalcogenides
   Advanced Materials **31**, 1903795 (2019). [IF 2019: 27.398]



Media/press releases:
• https://www.agi.it/scienza/bolle_idrogeno_semiconduttori-6297600/news/2019-10-05/
• https://fidest.wordpress.com/2019/10/08/bolle-di-idrogeno-un-nuovo-meccanismo-per-generare-luce-dai-cristalli/
• https://www.radio24.ilsole24ore.com/programmi/smart-city/puntata/nano-cupole-inventato-nuovo-modo-creare-materiali-bidimensionali-210415-ACpxr56
• https://www.uniroma1.it/it/notizia/bolle-di-idrogeno-un-nuovo-meccanismo-generare-luce-dai-cristalli

SUBMITTED WORKS

– Elena Blundo, Federico Tuzi, Marzia Cuccu, Salvatore Cianci, Katarzyna Olkowska-Pucko, Giorgio Contestabile, Marco Felici, Giorgio Pettinari, Takashi Taniguchi, Kenji Watanabe, Adam Babin´ski, Maciej R. Molas, and Antonio Polimeni
  Localisation-to-delocalisation transition of moiré excitons in a $WSe_2/MoSe_2$ heterostructure
  Under review.

– Cinzia Di Giorgio, Elena Blundo, Julien Basset, Giorgio Pettinari, Marco Felici, Charis HL Quay, Stanislas Rohart, Antonio Polimeni, Fabrizio Bobba, and Marco Aprili
  Imaging the Quantum Capacitance of Strained MoS_2 Monolayer by Electrostatic Force Microscopy
  arXiv preprint arXiv:2302.14584
  Under review.

INVITED TALKS AT NATIONAL/INTERNATIONAL CONFERENCES

—— 2024 ——

5. Elena Blundo *et al.*,
   Flatlands beyond graphene 2024, to be held on 8-13 September 2024, Wroklaw, Poland.

—— 2023 ——

4. Elena Blundo *et al.*,
   To moiré or not to moiré, that is the question
   2D Materials workshop 2023, 15-17 November 2023, Grenoble, France.
3. Elena Blundo, Salvatore Cianci, Giorgio Pettinari, Marco Felici, and Antonio Polimeni
   Strain tuning of the optoelectronic properties of two-dimensional crystals.
   EP2DS-MSS conference 2023, 9-14 June 2023, Grenoble, France.
2. Elena Blundo *et al.*,
   Dome-shaped two-dimensional crystal: A playground for the study of the crystal mechanical and optoelectronic properties.
   Seminar at the Walter Schottky Institut, 25 April 2023, Munich, Germany.

—— 2022 ——

1. Elena Blundo, Paulo E. Faria Junior, Alessandro Surrente, Giorgio Pettinari, Mikhail A. Prosnikov, Katarzyna Olkowska-Pucko, Klaus Zollner, Tomasz Woz´niak, Andrey Chaves, Tomasz Kazimierczuk, Marco Felici, Adam Babin´ski, Maciej R. Molas, Peter C. M. Christianen, Jaroslav Fabian, and Antonio Polimeni.
   Gyromagnetic factor of k-space direct and indirect excitons in strained WS2 monolayers.
   European Magnetic Field Laboratory User Meeting, 15 June 2022, Grenoble, France.

ORAL PRESENTATIONS AT NATIONAL/INTERNATIONAL CONFERENCES

The candidate presented (or is going to present) her work in the following conferences and workshops.

—— 2023 ——

11. Elena Blundo, Federico Tuzi, Marzia Cuccu, Salvatore Cianci, Katarzyna Olkowska-Pucko, Giorgio Contestabile, Marco Felici, Giorgio Pettinari, Takashi Taniguchi, Kenji Watanabe, Adam Babin´ski, Maciej R. Molas, and Antonio Polimeni
    Localisation-to-delocalisation transition of moiré excitons in a $WSe_2/MoSe_2$ heterostructure
    109° Congresso Nazionale SIF, 11-14 September 2023, Salerno, Italy.
10. Elena Blundo, Salvatore Cianci, Federico Tuzi, Giorgio Pettinari, Katarzyna Olkowska-Pucko, Eirini Parmenopoulou, Djero B. L. Peeters, Antonio Miriametro, Takashi Taniguchi, Kenji Watanabe, Adam Babin´ski, Maciej R. Molas, Marco Felici, and Antonio Polimeni
    Single photon emitters in hydrogen-filled transition metal dichalcogenide domes
    109° Congresso Nazionale SIF, 11-14 September 2023, Salerno, Italy.

—— 2022 ——

9. Elena Blundo, Cinzia Di Giorgio, Giorgio Pettinari, Tanju Yildirim, Alessandro Surrente, Paulo Eduardo Faria Junior, Mikhail Prosnikov, Katarzyna Olkowska Pucko, Maciej R Molas, Marco Felici, Adam Babin´ski, Peter Christianen, Fabrizio Bobba, Jaroslav Fabian, and Antonio Polimeni
   Strain fields at the micro-scale in two-dimensional materials.
   MRS 2022 Fall Meeting & Exhibit, 27 November - 2 December 2022, Boston, Massachusetts, USA.
8. Elena Blundo, Marzia Cuccu, Giorgio Pettinari, Salvatore Cianci, Atanu Patra, Marco Felici, Antonio Polimeni
   Strain-tuning of the optoelectronic and spin properties of 2D crystals.
   Graphene 2022, 5-8 July 2022, Aachen, Germany.

—— 2021 ——

7. Elena Blundo, Marzia Cuccu, Giorgio Pettinari, Salvatore Cianci, Atanu Patra, Marco Felici, Antonio Polimeni
   Tuning the optoelectronic properties of van der Waals heterostructures.
   107° Congresso Nazionale SIF, 13-17 September 2021, Online conference.
6. Elena Blundo, Giorgio Pettinari, Tanju Yildirim, Paulo E. Faria Junior, Marco Felici, Jaroslav Fabian, Antonio Polimeni
   Bubbling-induced straining of Two-Dimensional Crystals.
   Workshop 2Day, 17-18 June 2021, La Sapienza, Rome.
5. Elena Blundo, Marzia Cuccu, Giorgio Pettinari, Cinzia Di Giorgio, Tanju Yildirim, Paulo E. Faria Junior, Marco Felici, Fabrizio Bobba, Antonio Polimeni
   Strain Tuning of the Optoelectronic Properties of Two-Dimensional Crystals.
   MRS 2021 Virtual Spring Meeting & Exhibit, 17-23 April 2021, Online conference.

—— 2020 ——

4. Elena Blundo, Cinzia Di Giorgio, Marco Felici, Giorgio Pettinari, Tanju Yildirim, Yuerui Lu, Fabrizio Bobba, Antonio Polimeni
   Bubble formation in van der Waals crystals: A platform for fundamental studies.
   106° Congresso Nazionale SIF, 14-18 September 2020, Online conference.

—— 2019 ——

3. Elena Blundo, Davide Tedeschi, Marco Felici, Giorgio Pettinari, Boqing Liu, Tanju Yildirim, Chris Zhang, Yuerui Lu, Antonio Polimeni
   Proton-induced straining of two-dimensional crystals
   105° Congresso Nazionale SIF, 23-27 September 2019, L'Aquila, Italy.
2. Elena Blundo, Davide Tedeschi, Marco Felici, Giorgio Pettinari, Boqing Liu, Tanju Yildirim, Chris Zhang, Yi Zhu, Yuerui Lu, Antonio Polimeni
   Controllable micro/nano-dome creation in proton-irradiated bulk transition-metal dichalcogenides
   Nanoinnovation 2019, 12-14 June 2019, Rome, Italy.

—— 2018 ——

1. Elena Blundo, Davide Tedeschi, Marco Felici, Giorgio Pettinari, Simona Sennato, Elisa Petroni, Tanju Yildirim, Chris Zhang, Ankur Sharma, Boqing Liu, Yuerui Lu, Antonio Polimeni
   Hydrogen-driven generation of atomically thin, light emitting domes in transition metal dichalcogenides
   Materials 2018, 22-26 October 2018, Bologna, Italy.

TAEKWONDO - COACHING & REFEREEING

- **Coach** since 2015
- **National Freestyle Referee** since 2016
- **National Poomsae Referee** since 2017
- **Head coach of the Lazio Regional Poomsae & Freestyle team - Cadet & Junior divisions** 2019-2021
- **Head coach of the National Poomsae team - Youth sector, and of the National Freestyle team** since 2022
- **Head Coach of the Demo Team Italia** since 2022

TAEKWONDO - HEAD COACH PALAMRES

World Championships

2 Bronze medals World Demonstration Championships Final 2023, Over 17 Team, in Chuncheon, Korea.

2 Gold medals World Demonstration Championships Final 2023, Under 17 Team, in Chuncheon, Korea.

1 Gold medal & 1 Silver medal World Demonstration Championships Overseas Division 2023, Over 17 Team, in Chuncheon, Korea.

2 Gold medals World Demonstration Championships Overseas Division 2023, Under 17 Team, in Chuncheon, Korea.

Beach World Championships

1 Gold and 2 Silver Medals Beach World Championships 2023, Freestyle Under 17, in Chuncheon, Korea.

1 Gold Medal Beach World Championships 2023, Poomsae 17, in Chuncheon, Korea.

European Championships

3 Gold Medals, 1 Silver Medal, and 1 Bronze Medal European Championships 2023, Freestyle (Golds: Individual Under 17 female, Pair Over 17, Mixed Team; Silver: Pair Under 17; Bronze: Individual Under 17 female), in Innsbruck, Austria.

1 Silver Medal, and 2 Bronze Medals European Championships 2023, Poomsae, Youth sector (Silver: Team Cadet male; Bronze: Individual cadet male, Pair cadet), in Innsbruck, Austria.

TAEKWONDO - ATHLETE PALMARES

World Championships

 **2 Bronze medals** World Demonstration Championships Final 2023 in Chuncheon, Korea.

 **1 Gold medal & 1 Silver medal** World Demonstration Championships Overseas Division 2023 in Chuncheon, Korea.

 **1 Silver Medal** World Poomsae Championships 2012 in Tunja, Colombia.

Beach World Championships

 **1 Silver Medal & 1 Bronze medal** Beach World Championships 2018 in Rhodes, Greece.

Grand Prix

 **1 Silver medal & 1 Bronze medal** World Taekwondo Grand Prix 2019 in Rome.

European Championships

 **1 Silver medal & 1 Bronze medal** European Championships 2011 in Genoa, Italy.

 **1 Bronze medal** European Championships 2013 in Alicante, Spain.

 **1 Bronze medal** European Championships 2015 in Belgrade, Serbia.

Europe Beach Championships

 **1 Gold medal & 2 Silver medals** Europe Beach Championships 2019 in Antalya, Turkey.

Opens

 **2 Gold medals** Korean Open 2010 in Gumi.

 **1 Gold medal & 1 Silver medal** Austrian Open 2012 in Vienna.

 **1 Bronze medal** French Open 2016 in Lille.

 **1 Silver medal & 1 Bronze medal** Belgian Open 2018 in Lommel.

 **1 Bronze medal** Austrian Open 2020 in Vienna.

National championships

 **11 times National Poomsae Champion (Gold medalist)** National Championships 2008, 2009, 2010, 2011, 2012, 2014, 2017, 2018, 2019, 2021, 2022.

 **1 time National Freestyle Champion (Gold medalist)** National Championships 2017.

SPORT AWARDS

7 x  **7 Bronze medals of Sports Merit** by CONI (the Italian Olympic Committee), in 2011, 2013, 2014, 2015, 2017, 2018, 2019