

Curriculum vitae

PERSONAL INFORMATION	Elena Blundo
	<b>1</b> +39 06 4991 4385
	⊠ <u>elena.blundo@uniroma1.it</u>
	Nationality Italian
CV APPLIED FOR	Borsa di ricerca (Bando 235/2022, Sapienza)
EDUCATION	
Nov 2019 – Jan 2023	PhD student in Physics
	Sapienza, University of Rome
	PhD student at the <i>Optical Spectroscopy of Nanostructured Materials laboratory</i> under the supervision of Prof. Antonio Polimeni.

The candidate is currently a **third-year PhD student**. The defense is expected to take place on 30 January 2023.

Her research activity has been focused on the study of the interaction of hydrogen molecules and ions with van der Waals (vdW) crystals and of the opto-electronic and mechanical properties of vdW crystals in their two-dimensional form. In particular, the candidate has mainly focused on the study of the effects of external perturbations in these systems, such as: strain, magnetic fields. The candidate has also investigated the optical properties of perovskites, semiconducting nanowires, and bulk semiconductors. A more detailed overview of the candidate's research is provided in the Research Outline at the end of this CV. Her research activity has included the fabrication, hydrogen exposure, and spectroscopic characterisation of the samples. During the last year of her PhD, the candidate has also been working under the supervision of Dr. Giorgio Pettinari (National Research Council, Institute for Photonics and Nanotechnologies) to get acquainted with clean room research.

## 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**.

europass	Curriculum vitae	Elena Blundo
Sep 2014 – Oct 2017	Bachelor's Degree in Physics & Path of E Sapienza, University of Rome Thesis: <i>Mechanical deformations of two-dimensional r</i> Antonio Polimeni. Mark: <b>110/110 cum laude</b> The candidate also accomplished the <b>Path of exceller</b>	Excellence materials, under the supervision of Prof. nce 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 ac ship activity.	ccomplished in total 240 hours of tutor-
a.v. 2021/22. Il semester	Tutorship activity	
,·, · · · · · · · · · · · · · · · ·	Physics Department of Sapienza, University of Rome	
	40 hours of tutorship activity in the Bachelor's Degree ing assistant for the Mechanics Course. Specifically, t preparation for the written exam through exercise class	in Physics. The candidate was a teach- he candidate supported students in the ses.
a.v. 2021/22. I semester	Tutorship activity	
	Physics Department of Sapienza, University of Rome	
	40 hours of tutorship activity in the Bachelor's Degree a teaching assistant for the Physics Course. Specific through online meetings aimed at revising notions of magnetism and Optics, and at doing exercises.	ee in Biotechnology. The candidate is ally, the candidate helped the students Mechanics, Thermodynamics, Electro-
a v 2020/21 II semester	Tutorship activity	
a.j0_0, _ , 000000	Physics Department of Sapienza, University of Rome	
	80 hours of tutorship activity in Bachelor's degree cours. The candidate was a teaching assistant for the Mecha preparation of the laboratory experiences and helping s	es during the academic year 2020/2021. anics Laboratory Course, helping in the students prepare for the exam.
a.v. 2019/20. Il semester	Tutorship activity	
<b>,</b> ,	Physics Department of Sapienza, University of Rome	
	40 hours of tutorship activity in Bachelor's degree course. The candidate was a teaching assistant for the Mecha preparation of the laboratory experiences and helping s	es during the academic year 2019/2020. anics Laboratory Course, helping in the 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 <i>support activiti</i> in English, and having difficulties in the comprehension	ies for Italian students attending courses n 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:

present 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 1<sup>st</sup> in the contest for the PhD in Physics.
 a.y. 2019/20 Winner and ranked 1<sup>st</sup> 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/10.1 021/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 IIGht 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 are currently being performed at the HFML.

## 2020 Grant (role: PI)

Sapienza, University of Rome

Avvio alla Ricerca Tipo I 2020

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

Funding =  $\in$  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  $1^{\rm st}$  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	
4 weeks	University of Warsaw, Poland
	During her second and third year as a PhD student, the candidate carried out two 2-week research projects (NSC01-121 and NSC07-221) at the University of Warsaw, in the group led by Profs. Maciej Molas and Adam Babiński, to perform optical measurements on semiconductor nanostructures under magnetic fields up to 12 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	
2022	<b>Exhibit "Dire l'indicibile"</b> from 31 March to 8 April 2022 at Sapienza University of Rome organised for the <i>Italian quantum weeks</i> . 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	<b>Workshop 2Day</b> , 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 Re- search, 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 <b>10-time National Champion</b> and an <b>International player of the National Team</b> <b>Italy</b> . 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 <b>Head Coach of the National Poomsae Team</b> , <b>Youth sector</b> (see https://www.taekwondoitalia.it/news/2004-nomine-nazionali-f ita.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 <b>Head Coach of the Taekwondo Demo Team Italia</b> , the first ever western ( <i>i.e.</i> , 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 <i>Champions in life and sport</i> . 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 be-
	tween 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-amb izione-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-d iventare-ricercatrice-ma-3801356422259.shtml

## PERSONAL SKILLS

Mother tongue	Italian				
Other languages	UNDERST	TANDING	SPE/	AKING	WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1
	Levels: A1 and A Common Europe	A2: Basic user - ean Framework	- B1 and B2: Independent of Reference for Languag	user – C1 and C2: Proficie <u>es</u>	nt user
Team work	The candidate sibility to colla Netherlands, A tice. The cand requires remar	has worked i borate with n Australia and l lidate is also f rkable attitude	n various types of tean hany other research gr JS). In sport, her activit Head Coach of the Italia to work in a team.	ns. In the research field oups (in Italy, UK, Gerr y concerns both individu an Taekwondo Demonsti	, she had the pos- nany, Poland, The al and group prac- ration Team, which
Managerial skills	The candidate field, she co-su and gained ex "Sporting Club 2021, and in 2 sector, and He korean) demon managerial role	has gained upervised the perience as to Nuovo Laure 2022 she was ad Coach of to nstration team es within the l	remarkable experience research activity of man utor. In sport, she is a entino" since 2018. She a nominated Head Coa he "Taekwondo Demo T n. She is thus currently talian Taekwondo Fede	as manager and leade y students (see above "S coach since 2015 and h led the Lazio Regional ch of the National Poom eam Italia", the first ever y holding two among the ration.	r. In the research supervisor activity") has led the society team from 2019 to hsae Team - Youth western ( <i>i.e.</i> , non- e most prestigious
Computer skills	<ul><li>competent v</li><li>programmin</li></ul>	vith most Micr g experience	osoft Office programs a in the c language	and with LateX	
RESEARCH TRACK RECORD	The candidate h-factor: <b>10</b> (S Citations: <b>347</b> Average citatio *calculated over th Total impact fa Average IF per Average IF per Papers as first Papers as first	is author of 2 cholar), <b>10</b> (S (Scholar), <b>27</b> ( ons per publica- te no. of publication ctor (IF): <b>225.</b> r publication: <b>1</b> r year (from S author: <b>11</b> ( <b>4</b> or second au	6 peer-reviewed papers copus), 9 (WoS). 0 (Scopus), 257 (WoS). ation*: 13.4 (Scholar), 1 ons currently recognised by the 671 3.680 ep 2019 to Jan 2023): 6 2 %) thor: 20 (77 %)	5. 0.4 (Scopus), 9.9 (WoS) e database (26, Scholar; 26, Sc 56.0	opus; 26, WoS)



UBLICATIONS _		
	<u> </u>	
26.	Katarzyna Olkowska-Pucko, <u>Elena Blundo</u> , Natalia Zawadzka clavkova, Piotr Kapuściński, Dipankar Jana, Giorgio Pettinari, ski, Miroslav Bartos, Kenji Watanabe, Takashi Taniguchi, Cleme Adam Babiński, Antonio Polimeni, and Maciej R. Molas	, Salvatore Cianci, Diana Va Marco Felici, Karol Nogajew nt Faugeras, Marek Potemski
	Excitons and trions in WSSe monolayers	
	2D Materials <b>10</b> , 015018 (2023).	[IF 2021: 7.687]
	2022	
25.	Lorenza Romagnoli, Andrea D'Annibale, <u>Elena Blundo</u> , Antoni Giuseppe Chita, Riccardo Panetta, and Alessandro Latini	io Polimeni, Alberto Cassetta
	Synthesis, structure and characterization of 4,4'-(anthracene-9, methyl-1-pyridinium) bismuth iodide $(C_{30}H_{22}N_2)_3Bi_4I_{18}$ , an air, hybrid perovskite with high photoluminescence efficiency.	10-diylbis(ethyne-2,1-diyl))bis water and thermally stable 01
	Crystal Growth & Design 22, 7426 (2022).	[IF 2021: 4.076]
24.	Maria Grazia Betti, <u>Elena Blundo</u> , Marta De Luca, Marco Felici, Ito, Samuel Jeong, Dario Marchiani, Carlo Mariani, Antonio Poli Trequattrini, Rinaldo Trotta,	Riccardo Frisenda, Yoshikazı meni, Marco Sbroscia, France
	Homogeneous Spatial Distribution of Deuterium Chemisorbed Nanomaterials <b>12</b> , 2613 (2022).	on Free-Standing Graphene, [IF 2021: 5.719]
23.	James Felton, <u>Elena Blundo</u> , Zakhar Kudrynskyi, Sanliang Lin Pettinari, Timothy Cooper, Matthew Wadge, Zakhar Kovalyuk, <i>P</i> David Grant, Gavin Walker, Amalia Patané	g, Jonathan Bradford, Giorgi Antonio Polimeni, Peter Betor
	The Reaction of $SnS_2$ with $H_2$ as a Method to Produce $SnS_{2/2}$ drogen Technologies and Beyond	SnS Heterostructures for Hy
	Small 18, 2202661 (2022).	[ IF 2021: 15.153
22.	<u>Elena Blundo</u> *, Paulo E. Faria Junior*, Alessandro Surrente, Prosnikov, Katarzyna Olkowska-Pucko, Klaus Zollner, Tomas Tomasz Kazimierczuk, Marco Felici, Adam Babiński, Maciej tianen, Jaroslav Fabian, and Antonio Polimeni*, * co-corresponding authors	Giorgio Pettinari, Mikhail A sz Woźniak, Andrey Chaves R. Molas, Peter C. M. Chris
	Strain-induced exciton hybridization in WS <sub>2</sub> monolayers unveil surements	iled by Zeeman splitting mea
	Physical Review Letters 129, 067402 (2022).	[IF 2021: 9.185]
21.	Cinzia Di Giorgio <sup>†</sup> , <u>Elena Blundo</u> <sup>†</sup> , Giorgio Pettinari, Marco Fel nio Polimeni	ici, Fabrizio Bobba, and Anto
	Mechanical, elastic and adhesive properties of two-dimensio techniques to state-of-the-art local probe measurements † co-first authors	nal materials: From strainin
	Advanced Materials Interfaces <b>9</b> , 2102220 (2022).	[ IF 2021: 6.389
20.	Maria Grazia Betti, Ernesto Placidi, Chiara Izzo, <u>Elena Blun</u> Sbroscia, José Avila, Pavel Dudin, Kailong Hu, Yoshikazu Ito, I Elisa Molinari, and Carlo Mariani*	<u>do,</u> Antonio Polimeni, Marc Deborah Prezzi, Miki Bonacc
	Gap opening in double side highly hydrogenated free standing Nano Letters <b>22</b> , 2971 (2022).	graphene [ IF 2021: <b>12.262</b>
19.	Salvatore Cianci, Elena Blundo, Marco Felici, Antonio Polimeni	i, and Giorgio Pettinari
	<i>Tailoring the optical properties of 2D transition metal dichalcog</i> Optical materials <b>125</b> , 112087 (2022).	enides by strain [ IF 2021: 3.754
18.	Elena Blundo, Alessandro Surrente, Davide Spirito, Giorgio Po Alvarado Chavarin, Leonetta Baldassarre, Marco Felici, and Ar Vibrational properties in highly strained hexagonal boron nitride	ettinari, Tanju Yildirim, Carlo ntonio Polimeni e bubbles
	Nano Letters 22, 1525 (2022).	[ IF 2021: 12.262
17.	Arkadeb Pal, T. W. Kuo, Chia-Hsiu Hsu, D. C. Kakarla, Ajay Tiv P. Yanda, <u>Elena Blundo</u> , Antonio Polimeni, A. Sundaresan, F. C.	vari, M. C. Chou, Atanu Patra C. Chuang, and H. D. Yang



Curriculum vitae

	phase, metamagnetic transition and magnetodielectric effect Physical Review B <b>105</b> , 024420 (2022).	[IF 2021: 3.908]
16.	Diego Di Girolamo, <u>Elena Blundo</u> , Giulia Folpini, Corinna Ponti, Guixiar damasy, Zafar Iqbal, Jorge Pascual, Giuseppe Nasti, Meng Li, Roberto Av Alessandro Latini, Fahad Alharthi, Marco Felici, Annamaria Petrozza, An Antonio Abate Energy distribution in tin halide perovskite	ng Li, Mahmoud Al- volio, Olga Russina, tonio Polimeni, and
	Solar RRL <b>6</b> , 2100825 (2022).	[IF 2021: 9.173]
15.	Francesco Filippone, Saeed Younis, Giuseppe Mattioli, Marco Felici, <u>Ele</u> Polimeni, Giorgio Pettinari, Damiano Giubertoni, Eduard Sterzer, Kerstir Alok Rudra, Eli Kapon, and Aldo Amore Bonapasta	n <u>a Blundo</u> , Antonio Volz, Dan Fekete,
	Selective effects of the host matrix in hydrogenated InGaAsN alloys: a no ing paradigm.	ew defect engineer-
	Advanced Functional Materials 32, 2108862 (2022).	[IF 2021: 19.924]
	2021	
14.	Cinzia Di Giorgio, <u>Elena Blundo</u> , Giorgio Pettinari, Marco Felici, Antonio rizio Bobba	Polimeni, and Fab-
	Exceptional elasticity of micro-scale constrained $MoS_2$ domes ACS Applied Materials and Interfaces <b>13</b> , 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 s Il Nuovo Cimento C <b>44</b> , 1 (2021), Invited Paper.	<i>tudies</i> [ IF 2021: <b>0.252</b> ]
12.	Elena Blundo*, Tanju Yildirim, Giorgio Pettinari, and Antonio Polimeni* * co-corresponding authors <i>Experimental Adhesion energy in van der Waals crystals and heterostructu</i> <i>thin bubbles</i> Physical Review Letters <b>127</b> , 046101 (2021).	ures from atomically-
11.	Elena Blundo, Antonio Polimeni, Daniele Meggiolaro, Andrea D'Annibal noli, Marco Felici, and Alessandro Latini Brightly Luminescent and Moisture Tolerant Phenyl-Viologen Lead loc Light Emission Applications The Journal of Physical Chemistry Letters <b>12</b> , 5456 (2021).	e, Lorenza Romag- lide Perovskites for [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-data Applied Physics Reviews <b>8</b> , 021318 (2021).	imensional crystals [IF 2021: 19.527]
9.	Mahmoud M. S. Abdelnabi, Chiara Izzo, <u>Elena Blundo</u> *, Maria Grazia Be Giulia Di Bella, Gianluca Cavoto, Antonio Polimeni, Isabel Garcia-Corte Alejandro Moroño, Kailong Hu, Yoshikazu Ito, and Carlo Mariani* * co-corresponding authors <i>Deuterium Adsorption on Free-Standing Graphene</i>	tti, Marco Sbroscia, s, Isabel Rucandio,
	Nanomaterials <b>11</b> , 130 (2021).	[IF 2021: 5.719]
8.	Mahmoud M. S. Abdelnabi, <u>Elena Blundo</u> , Maria Grazia Betti, Gianluc Placidi, Antonio Polimeni, Alessandro Ruocco, Kailong Hu, Yoshikazu I	ca Cavoto, Ernesto to, and Carlo Mari-
	Towards Free-Standing Graphane: Atomic Hydrogen and Deuterium Bond Graphene	ling to Nano-Porous
	Nanotechnology <b>32</b> , 035707 (2021).	[IF 2021: 3.953]
	<u> </u>	
7.	Cinzia Di Giorgio, <u>Elena Blundo</u> , Giorgio Pettinari, Marco Felici, Yuerui I colo, Antonio Polimeni, and Fabrizio Bobba	u, Anna Maria Cu-
	Nano-scale measurements of elastic properties and hydrostatic pressure membranes	In H <sub>2</sub> -bulged MoS <sub>2</sub>
	Advanced Materials Interfaces 7, 2001024 (2020).	[IF 2020: 6.147]



[IF 2020:/]

[IF 2019: 27.398]

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<sub>2</sub> 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  $\gamma$ -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<sub>2</sub>, MoS<sub>2</sub>, and WSe<sub>2</sub>

Physical Review Research 2, 012024 (2020). Rapid Communication.

- 2019 ——
- Davide Tedeschi<sup>†</sup>, <u>Elena Blundo</u><sup>†</sup>, Marco Felici, Giorgio Pettinari, Boqing Liu, Tanju Yildirim, Elisa Petroni, Chris Zhang, Yi Zhu, Simona Sennato, Yuerui Lu, and Antonio Polimeni
   <sup>†</sup> co-first authors

Controlled micro/nano-dome formation in proton-irradiated bulk transition-metal dichalcogenides

Advanced Materials 31, 1903795 (2019).



Media/press releases:

- https://www.agi.it/scienza/bolle\_idrogeno\_semicondut tori-6297600/news/2019-10-05/

- https://fidest.wordpress.com/2019/10/08/bolle-di-idr ogeno-un-nuovo-meccanismo-per-generare-luce-dai-crist alli/

- https://www.radio24.ilsole24ore.com/programmi/smart-c ity/puntata/nano-cupole-inventato-nuovo-modo-creare-mat eriali-bidimensionali-210415-ACpxr56

- https://www.uniroma1.it/it/notizia/bolle-di-idrogen
o-un-nuovo-meccanismo-generare-luce-dai-cristalli

#### SUBMITTED WORKS

1. Boqing Liu, Tanju Yildirim, Tieyu Lü, <u>Elena Blundo</u>, 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* Under review.



- Lorenza Romagnoli, Andrea D'Annibale, <u>Elena Blundo</u>, Atanu Patra, Antonio Polimeni, Daniele Meggiolaro, Iryna Adrusenko, Danilo Marchetti, Mauro Gemmi, and Alessandro Latini 4,4'-(anthracene-9,10-diylbis(ethyne-2,1-diyl))bis(1-methyl-1-pyridinium) lead iodide C<sub>30</sub>H<sub>22</sub>N<sub>2</sub>Pb<sub>2</sub>I<sub>6</sub>: a highly luminescent, chemically and thermally stable 1D hybrid perovskite Under review.
- Salvatore Cianci, <u>Elena Blundo</u>, Federico Tuzi, Giorgio Pettinari, Katarzyna Olkowska-Pucko, Eirini Parmenopoulou, Djero B. L. Peeters, Antonio Miriametro, Takashi Taniguchi, Kenji Watanabe, Adam Babinski, Maciej R. Molas, Marco Felici, and Antonio Polimeni Spatially controlled single photon emitters in hBN-capped WS<sub>2</sub> domes Under review.
- Boqing Liu, Tanju Yildirim, <u>Elena Blundo</u>, Domenico de Ceglia, Zongyou Yin, Daniel Macdonald, 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* Submitted.

#### INVITED TALKS AT NATIONAL/INTERNATIONAL CONFERENCES

--- 2022 -----

 <u>Elena Blundo</u>, Paulo E. Faria Junior, Alessandro Surrente, Giorgio Pettinari, Mikhail A. Prosnikov, Katarzyna Olkowska-Pucko, Klaus Zollner, Tomasz Woźniak, Andrey Chaves, Tomasz Kazimierczuk, Marco Felici, Adam Babiński, 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.

\_\_\_ 2022 \_\_\_\_

 <u>Elena Blundo</u>, Cinzia Di Giorgio, Giorgio Pettinari, Tanju Yildirim, Alessandro Surrente, Paulo Eduardo Faria Junior, Mikhail Prosnikov, Katarzyna Olkowska Pucko, Maciej R Molas, Marco Felici, Adam Babinski, Peter Christianen, Fabrizio Bobba, Jaroslav Fabian, and Antonio Polimeni

Strain fields at the micro-scale in two-dimensional materials.

MRS 2022 Fall Meeting & Exhibit, to be held on 27 November - 2 December 2022, Boston, Massachusetts, USA.

8. <u>Elena Blundo</u>, 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.

- 7. <u>Elena Blundo</u>, 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. <u>Elena Blundo</u>, 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. <u>Elena Blundo</u>, 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.

4. <u>Elena Blundo</u>, 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. <u>Elena Blundo</u>, 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.

 <u>Elena Blundo</u>, 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. <u>Elena Blundo</u>, 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 - RECORDS
 The candidate is:

 the only Italian athlete to ever conquer a medal (Silver medal in 2012) at the World Poomsae Championships in an individual junior division;
 the first Italian athlete together with G. Peighinu to ever conquer a medal (Bronze Medal in 2015 at the European Taekwondo Championships) in the Freestyle division in an international competition;
 the only Italian athlete of the National team to do a PhD;
 the first woman and the youngest person to ever lead the National Team (specifically, she is head coach of the Youth sector) in the history of Italian Taekwondo.

 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 Lazio Regional Poomsae team Cadet & Junior divisions 2022
- Head coach of the National Poomsae team Youth sector since 2022 (see https://ww w.taekwondoitalia.it/news/2004-nomine-nazionali-fita.html)
- Head Coach of the Demo Team Italia since 2022

#### SPORT AWARDS

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



# **TAEKWONDO PALMARES** World Championships



1 Silver Medal World Championships 2012 in Tunja, Colombia.

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

## **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,

1 Bronze medal European Championships 2013 in Alicante, Spain.

1 Bronze medal European Championships 2015 in Belgrade, Serbia.

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

**10** x **(**) **10 times National Poomsae Champion (Gold medalist)** National Championships 2008, 2009, 2010, 2011, 2012, 2014, 2017, 2018, 2019, 2021.

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