Dichiarazione sostitutiva atto notorietà
(art. 47 DPR 445 DEL 28.12.2000)
ai sensi dell'art. 15, comma 1, lett. c), D.Lgs 33/2013 e
ai sensi dell'art. 20 comma 5, del D. Lgs. 8 aprile 2013 n. 39

Il/La sottoscritto/a RICCARDO CASUCA CF. CSLRCR86L08B354G

nato a CAGLIARI Prov (SA) il 08/07/1986

consapevole delle sanzioni penali, nel caso di dichiarazione non veritiere, di formazione o uso di atti falsi, richiamate dall'art. 76 del DPR n. 445 del 28.12.2000

DICHIARA

ai sensi dell'art. 15, c. 1, lett. c) del D.Lgs 33/2013 e ai sensi dell'art. 20, c. 5 del D.Lgs 39/2013

in relazione al conferimento dell'incarico di : SEMINARIO

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a) ☒ di non svolgere incarichi e di non essere titolare di cariche in Enti di diritto privato regolati o finanziati dalla Pubblica Amministrazione conferente;

ovvero

☐ di svolgere i seguenti incarichi o di essere titolare delle seguenti cariche in Enti di diritto privato regolati o finanziati dalla Pubblica Amministrazione conferente:

1) _____

2) _____

3) _____

b) ☒ di non svolgere attività professionali in Enti di diritto privato regolati o finanziati dalla Pubblica Amministrazione conferente;

ovvero

☐ di svolgere le seguenti attività professionali in Enti di diritto privato regolati o finanziati dalla Pubblica Amministrazione conferente:

1) _____

2) _____

3) _____

c) di non trovarsi in alcuna delle situazioni di inconferibilità di cui al D.Lgs n. 39/2013.

INFORMATIVA RIGUARDO AL TRATTAMENTO DEI DATI PERSONALI (ART. 13 REG.UE 2016/679)

Il/La sottoscritto/a prende atto che il trattamento dei propri dati personali e sensibili avverrà secondo le modalità stabilite dal Regolamento UE 2016/679 (GDPR) relativo alla protezione delle persone fisiche con riguardo al trattamento dei dati personali, al solo fine di assolvere gli adempimenti di natura obbligatoria posti in capo al LENS.

Il/La sottoscritto/a prende altresì atto che il curriculum vitae et studiorum e le dichiarazioni rese per le quali, ai sensi della normativa vigente, è prevista l'ottemperanza ad obblighi di trasparenza, verranno pubblicati sul sito web dell'Amministrazione in apposita sezione di "Amministrazione Trasparente", all'indirizzo https://www.lens.unifi.it, dove è presente una pagina dedicata alla tematica della protezione dei dati personali contenente anche l'informativa per il trattamento dei dati personali dei collaboratori esterni.

Il/La sottoscritto/a si impegna a comunicare eventuali cause di incompatibilità che intercorrano nel corso dello svolgimento dell'incarico.

Firenze, 27/06/2019

Riccardo Carla

IL /LA DICHIARANTE (firma leggibile per esteso)

RICCARDO **CASULA**

152 Maryhill road, Glasgow, Scotland, UK, G20 7QS | +44 (0) 7716402932 | riccardo.casula@icloud.com

SUMMARY

Research associate in advanced lasers. Specialized in the development, design, modelling and optimisation of optically-pumped semiconductor disk (VECSELs) and Raman lasers in continuous-wave regime. History of studies and experimental work on nonlinear optics, physics of condensed matter, and spectroscopy. Strongly motivated to pursue a research career and give a professional contribution to the laser industry.

SKILLS AND TECHNIQUES

- Laser: design, modelling, aligning, test and optimisation. Raman and SHG conversion
- Experience with high-power laser diodes.
- Instruments: laser diode, fibre-coupled laser diode up to 400 W output power in continuous wave, digital and analog oscilloscope, power meter, optical spectrum analyser, wavemeter, streak camera, optical fibre, temperature controller.
- Softwares: OriginPro, LaserCanvas, Avantes, ReZonator, WinLase, Matlab, Mathcad, C++.
- Fast and ultra-fast fluorescence spectroscopy.
- Micro-Raman spectroscopy.

SOFT SKILLS

- Data analysis
- Teamwork
- Attitude to work autonomously
- Problem solving
- Mathematics
- Eye for details

RESEARCH EXPERIENCE

Research associate April 2018 – current, Institute of Photonics, Department of Physics, University of Strathclyde (Glasogw, UK).

Continuous-wave VECSELs for cold Strontium atom experiments under the UK National Quantum Technology Hub for Sensors and Metrology:

- Built a compact 461 nm laser with a frequency-converted 922 nm VECSEL material for narrow-linewidth operation, making portable for the joint experiment with collaborators at the University of Birmingham.
- Designed and built new compact diode-pumped 689 nm VECSEL systems, essential for the development of compact (<5 litres) and portable VECSELs.
- Taken the lead on the group's interaction with collaborators at the Optoelectronics Research Centre at the Tampere University of Technology.
- Taken an active part in weekly team meetings, reporting my findings, contributing to discussions on the work of other team members.

Room Safety Nominee of the lab and therefore directly responsible for general organization and administration of risk assessments.

PhD student Oct 2014 – March 2018 (VIVA date TBC), Institute of Photonics, Department of Physics, University of Strathclyde – Part-funded by Fraunhofer Centre for Applied Photonics (Glasgow, UK).

Thesis: *Broadly tuneable crystalline Raman laser*. Developed optically-pumped VECSELs for Raman conversion in diamond and potassium gadolinium tungstate.

- Designed, built, and tested Raman lasers, when intracavity-pumped by continuous-wave VECSEL source based on III-V materials for emission in the visible and mid-infrared spectrum.
- Analysed the spatial and spectral broadening evolution in Raman lasers.
- Modelled an intracavity-pumped CW cascaded Raman laser.
- Reported the outcomes to international conferences and peer-reviewed journals.

Follow-up activities included:

- Single-frequency Raman laser: customized a Fabry-Pérot cavity interferometer to investigate single-longitudinal mode operation of narrow-linewidth Raman laser.
- Frequency comb: investigated cascaded $\chi(3):\chi(2)$ process in Raman-pumped second harmonic generation.

MSc 2012 – 2013, University of Cagliari (Italy)

- Spectroscopic and Raman study of silicon-based nanoelectronic devices.
- Used a wavelength-stabilized diode laser module for micro-Raman scattering to measure via Raman shift the mechanical stress in silicon oxide and nitride architectures.
- Employed a fast Nd:YAG-pumped optical parameter oscillator for time-resolved photoluminescence measurements to individuate defects in the material interface.

BSc 2009 – 2010, University of Cagliari (Italy)

- Study of optical properties of organic hetero-epitaxial nanofibres.
- Utilized an ultrafast laser to investigate the photoluminescence of the organic-organic nanofibres interface.

EDUCATION

PhD physics, 2019 (VIVA date TBC)

PhD in Physics. University of Strathclyde, Institute of Photonics, (Glasgow, UK)

MSc physics, 2013

Master of Science in Physics, Physics of condensed matter specialisation, equivalent first class, University of Cagliari (Italy)

BSc physics, 2010

Bachelor degree in Physics, equivalent first class
University of Cagliari (Italy)

RELEVANT PUBLICATIONS

Journal papers:

- *Cascaded crystalline Raman lasers for extended wavelength coverage: continuous-wave, third-Stokes operation* - R. Casula, J.-P. Penttinen, M. Guina, A. J. Kemp, and J. E. Hastie; **Optica**, Vol. 5, p. 1406 (2018)
- *1.4 μm, continuous-wave diamond Raman laser* - R. Casula, J.-P. Penttinen, M. Guina, A. J. Kemp, and J. E. Hastie; **Optics Express**, Vol. 25, p. 31377 (2017).

Conference papers:

- *GaN-diode-pumped AlGaInP VECSEL for strontium optical clocks (Invited talk)* – R. Casula, P. H. Moriya, G. A. Chappell, D. C. Parrotta, S. Ranta, H. Kahle, M. Guina, J. E. Hastie; SPIE Photonics West LASE p. 10901-25 (February 2019).
- *Continuous-wave, cascaded Raman laser at 1.3, 1.5 and 1.7 μm* – R. Casula, J.-P. Penttinen, M. Guina, A. J. Kemp, and J. E. Hastie; Conference on Lasers and Electro-Optics (CLEO), *oral contribution,* Munich, June 2017.
- *~1400-nm continuous-wave diamond Raman laser intracavity-pumped by an InGaAs semiconductor disk laser* – R. Casula, D.C. Parrotta, A. J. Kemp, J.-P. Penttinen, T. Leinonen, M. Guina, and J. E. Hastie; 7th EPS-QEOD Europhoton Conference, *oral contribution,* Vienna, August 2016.
- *InGaAs-QW VECSEL emitting >1300nm via intracavity Raman conversion* – D.C. Parrotta, R. Casula, J.-P. Penttinen, T. Leinonen, A. J. Kemp, M. Guina, and J. E. Hastie; Proceedings of SPIE 9734, VECSELS VI, March 2016.

INTERESTS

Playing piano, weight training, reading, photography, chess and gaming. Member of music school in Cagliari in 2003-2011 with several piano exhibitions.