

## Stefano Nejrotti, PhD

Fixed-Term Researcher

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### Current position

Nov 2024 – present Fixed-term researcher  
ISSMC-CNR, Faenza, Italy  
*NEST – Network for Energy Sustainable Transition (PNRR Extended Partnership project)*

### Education

Oct 2017 – Feb 2021 PhD in Chemical and Materials Sciences (with honours)  
Università degli Studi di Torino, Italy (prof. Cristina Prandi)  
*Lewis and Brønsted acid-catalysed synthetic transformations: new avenues for C-C bond formation*

Jul 2020 Professional license as Chemist

Oct 2014 – Mar 2017 MSc in Advanced Chemical Technologies (with honours)  
Università degli Studi di Torino, Italy (prof. Cristina Prandi)  
Final dissertation: "Oxidative gold catalysis: applications in synthesis"

Oct 2011 – Oct 2014 BSc in Chemistry and Chemical Technologies (with honours)  
Università degli Studi di Torino, Italy

### Research experience

Jul 2024 – Nov 2024 Post-doctoral researcher  
Università degli Studi di Torino, Italy (dr. Matteo Bonomo)  
*Design, synthesis and characterization of innovative and sustainable electrolytes for energy storage (GENESIS PRIN 2022 project)*

Jan – Jun 2024 Post-doctoral researcher  
Università degli Studi di Torino, Italy (prof. Nadia Barbero)  
*Design, synthesis and characterisation of sensitizers for transparent and colourless DSSCs (CANVAS Italian Electrical System Research Fund project)*

Sep 2022 – Dec 2023 Post-doctoral researcher  
Università degli Studi di Torino, Italy (dr. Matteo Bonomo)  
*Synthesis and spectroscopical characterization of ligands for Cu complexes, and their implementation in Metal Organic Frameworks, for catalytic applications (CuBE ERC Synergy project, EU H2020 grant agreement No. 856446)*

Sep 2021 – Aug 2022 Post-doctoral researcher  
Università degli Studi di Torino, Italy (prof. Claudia Barolo)  
*Synthesis and scale-up of organic emitters bioconjugated to aminoacids for applications in BIO-WLED (ArtiBLED FET Open project, EU H2020 grant agreement No. 863170)*

Dec 2020 – Jun 2021 and Apr – Sep 2017 Research fellow  
Chemistry Department, Università degli Studi di Torino (prof. Cristina Prandi)  
*Homogeneous catalysis in the presence of gold(I) complexes*

Feb 2016 – Mar 2017	Experimental research for MSc thesis Chemistry Department, Università degli Studi di Torino (prof. Cristina Prandi) <i>Oxidative gold catalysis: applications in synthesis</i>
<b>Short term scientific missions</b>	
Jul 2023 and Jul 2024	Visiting Scientist Instituto de Síntesis Química y Catálisis Homogénea, Zaragoza, Spain (prof. Elisabet Pires, dr. José M. Fraile) <i>Glycerol-inspired deep eutectic solvent: characterization and application as green solvents and electrolytes</i>
Apr – Jun 2019	Visiting PhD student Institut Català d'Investigació Química, Tarragona, Spain (prof. Antonio M. Echavarren) <i>Synthesis of new bifunctional ligands for gold(I) catalysis</i>
May – Jul 2016	Visiting MSc student – Erasmus Traineeship Institut de Recherche en Chimie Organique Fine, Rouen, France (dr. Michaël De Paolis) <i>Ring expansion by anionic fragmentation for the synthesis of 9-membered lactones</i>
<b>Teaching &amp; mentoring activity</b>	
Apr 2018 – Jun 2024	Teaching assistant – Organic Chemistry BSc in Biological Sciences, Università degli Studi di Torino 5 academic years: 2017–2018, 2019–2020, 2021–2022, 2022–2023, 2023–2024
Oct 2017– Oct 2021	Laboratory assistant – Organic Chemistry BSc in Chemistry and Chemical Technologies, Università degli Studi di Torino 4 academic years: 2017–2018, 2018–2019, 2020–2021, 2021–2022
Apr – Jun 2021	Teaching assistant – Organic Chemistry BSc in Chemistry and Chemical Technologies, Università degli Studi di Torino 1 academic year: 2020–2021
Jan – Feb 2020	Laboratory assistant – Organic Chemistry MSc in Chemistry, Università degli Studi di Torino 1 academic year: 2019–2020
Oct 2014 – Feb 2017	Teaching assistant – General and Inorganic Chemistry BSc in Biological Sciences, Università degli Studi di Torino 3 academic years: 2014–2015, 2015–2016, 2016–2017
Oct 2018 – Apr 2020	MSc thesis co-tutor Student: Salwa Simona Jamil, MSc in Chemistry, Università degli Studi di Torino
Mar 2017 – present	Supervisor of the laboratory activity of nine MSc/PhD students in Chemistry during their research activity.
<b>Publications</b>	
1.	N. Cei, I. Canesi, <u>S. Nejrrotti</u> , G. Montalbano, H. Darjazi, A. Piovano, M. Bonomo, A. Fina, B. Yecora, A. Perez, C. Barolo, C. Gerbaldi, D. Spinelli A UV-protective textile coating based on recycled poly(vinyl butyral) (PVB): a new life for a waste polymer <i>Polymers</i> <b>2024</b> , 16, 3439, doi: 10.3390/polym16233439

2. H. M. Schütz, ‡ Stefano Nejrótti, ‡ H. Adenusi, A. Mariani, E. Bodo, M. Bonomo, A. Innocenti, C. Barolo, X. Gao, S. Passerini  
Superionicity by design: high proton conductivity in a fluorine-free protic ionic liquid  
*J. Mater. Chem. A* **2024**, *12*, 18412–18422, doi: 10.1039/d4ta02880e – ‡ equal contribution
3. A. Carella, A. Landi, M. Bonomo, F. Chiarella, R. Centore, A. Peluso, S. Nejrótti, M. Barra  
Asymmetrical diketopyrrolopyrrole derivatives with improved solubility and balanced charge transport properties  
*Molecules* **2024**, *29*, 2805, doi: 10.3390/molecules29122805
4. S. Nejrótti, B. Centrella, D. Gallo, C. Barolo, M. Bonomo  
Turning Pd-catalysed direct C–H arylation of thiophene derivatives into green: industrial wastewater as an effective reaction medium  
*Green Chem.* **2024**, *26*, 7013–7018, doi: 10.1039/D4GC01139B
5. V. Nikitakos, A. D. Porfyrís, K. Beltsios, C. Pappaspyrides, S. Bordignon, M. R. Chierotti, S. Nejrótti, M. Bonomo, C. Barolo, A. Piovano, R. Pfaendner, B. Yecora, A. Perez  
An integrated characterization strategy on board for recycling of poly(vinyl butyral) (PVB) from laminated glass wastes  
*Polymers* **2024**, *16*, 10, doi: 10.3390/polym16010010
6. O. Yildirim, A. Tsaturyan, A. Damin, S. Nejrótti, V. Crocellà, A. Gallo, M. R. Chierotti, M. Bonomo, C. Barolo  
Quinoid-thiophene-based covalent organic polymers for high iodine uptake: when rational chemical design counterbalances the low surface area and pore volume  
*ACS Appl. Mater. Interfaces* **2023**, *15*, 15819–15831, doi: 10.1021/acsami.2c20853
7. D. Arnodo, E. Maffei, F. Marra, S. Nejrótti, C. Prandi  
Combination of enzymes and deep eutectic solvents as powerful toolbox for organic synthesis  
*Molecules* **2023**, *28*, 516, doi: 10.3390/molecules28020516
8. A. Carella, M. Franzini, S. Fusco, R. Centore, M. Barra, F. Chiarella, A. Cassinese, M. Bonomo, S. Nejrótti, M. Carbone, L. Gontrani  
Isoindigo dyes functionalized with terminal electron-withdrawing groups: computational, optical and electrical characterization  
*Dyes Pigm.* **2022**, *208*, 110866, doi: 10.1016/j.dyepig.2022.110866
9. A. Antenucci, ‡ S. Nejrótti, ‡ M. J. Morán Plata, N. Mariotti, N. Barbero  
Unconventional and sustainable syntheses of polymethine dyes. Critical overview and perspectives within the framework of the twelve principles of Green Chemistry  
*Eur. J. Org. Chem.* **2022**, e202200943, doi: 10.1002/ejoc.202200943 – ‡ equal contribution
10. S. Nejrótti, A. Antenucci, C. Pontremoli, L. Gontrani, N. Barbero, M. Carbone, M. Bonomo  
Critical assessment of the sustainability of deep eutectic solvents: a case study on six choline chloride-based mixtures  
*ACS Omega* **2022**, *7*, 47449–47461, doi: 10.1021/acsomega.2c06140
11. S. Nejrótti, F. Marra, E. Priola, A. Maranzana, C. Prandi  
Gold(I)-catalyzed reactivity of furan-ynes with *N*-oxides: synthesis of substituted dihydropyridinones and pyranones  
*J. Org. Chem.* **2021**, *86*, 8295–8307, doi: 10.1021/acs.joc.1c00746
12. A. Franchino, À. Martí, S. Nejrótti, A. M. Echavarren  
Silver-free Au(I) catalysis enabled by bifunctional urea- and squaramide-phosphine ligands via H-bonding  
*Chem. Eur. J.* **2021**, *27*, 11989–11996, doi: 10.1002/chem.202101751

13. S. Nejrotti, C. Prandi  
Gold catalysis and furans: a powerful match for synthetic connections  
*Synthesis* **2021**, 53, 1046–1060, doi: 10.1055/s-0040-1705996
14. S. Nejrotti, A. Mannu, M. Blangetti, S. Baldino, A. Fin, C. Prandi  
Optimization of Nazarov cyclization of 2,4-dimethyl-1,5-diphenylpenta-1,4-dien-3-one in deep eutectic solvents by a design of experiments approach  
*Molecules* **2020**, 25, 5726, doi: 10.3390/molecules25235726
15. D. Arnodo,‡ S. Ghinato,‡ S. Nejrotti,‡ M. Blangetti, C. Prandi  
Lateral lithiation in deep eutectic solvents: regioselective functionalization of substituted toluene derivatives  
*Chem. Commun.* **2020**, 56, 2391–2394, doi: 10.1039/d0cc00593b – Front Cover, ‡ equal contribution
16. S. Nejrotti, S. Ghinato, E. C. Gini, D. Scarpi, E. G. Occhiato, A. Maranzana, C. Prandi  
Gold(I)-catalysed hydroarylation of lactam-derived enynes as an entry to tetrahydrobenzo[g]quinolines  
*Eur. J. Org. Chem.* **2020**, 646–653, doi: 10.1002/ejoc.201901599 – Front Cover
17. S. Nejrotti, M. Iannicelli, S. S. Jamil, D. Arnodo, M. Blangetti, C. Prandi  
Natural deep eutectic solvents as an efficient and reusable active system for the Nazarov cyclization  
*Green Chem.* **2020**, 22, 110–117, doi: 10.1039/c9gc03465j
18. D. Reyes Loya, A. Jean, M. Cormier, C. Fressigné, S. Nejrotti, J. Blanchet, J. Maddaluno, M. De Paolis  
Domino ring expansion: regioselective access to 9-membered lactones with a fused indole unit from 2-nitrophenyl-1,3-cyclohexanediones  
*Chem. Eur. J.* **2018**, 9, 2080–2084, doi: 10.1002/chem.201705645
19. S. Nejrotti, G. Prina Cerai, A. Oppedisano, A. Maranzana, E. G. Occhiato, D. Scarpi, A. Deagostino, C. Prandi  
A gold(I)-catalyzed oxidative rearrangement of heterocycle-derived 1,3-enynes provides an efficient and selective route to divinyl ketones  
*Eur. J. Org. Chem.* **2017**, 6228–6238, doi: 10.1002/ejoc.201701212

## Conference Contributions

1. Oral communication  
*Enabling high proton conductivity in a fluorine-free protic ionic liquid through rational design of its constituents* **at:** Chimica Sotto l'Albero 2024 – Bari, 19–20/12/2024
2. Oral communication  
*Improving sustainability in the construction of conjugated molecular scaffolds: ionic liquids and (waste)water as solvents* **at:** XI Workshop GC-CS – Torino, 24–25/10/2024
3. Oral communication  
*Non-vehicular proton transport mechanism through rational design of a fluorine-free protic ionic liquid* **at:** EMLG-JMLG 2024 – Trieste, 8–13/09/2024
4. Poster  
*Artificial fluorescent proteins as sustainable downshifters for bio-hybrid LEDs: tailoring the emission through modifications of a non-native fluorophore* – **at:** XXVIII National Conference of the Italian Chemical Society – Milano, 26–30/08/2024
5. Flash oral communication  
*Towards stable red-emitting artificial fluorescent proteins for sustainable bio-hybrid WLEDs*

- at:** Italian Photochemistry Meeting – Sestri Levante, 14–16/12/2023
6. Poster  
*Thiophene-substituted 2,1,3-benzothiadiazole derivatives as tuneable organic emitters for white bio-hybrid LEDs*  
**at:** New Trends in Organic Synthesis – Milano, 27/11/2023
  7. Poster  
*Investigating the determining factors for Pd-catalysed synthetic methodologies in glycerol-based solvents*  
**at:** XLI Conference of the Organic Chemistry Division of the Italian Chemical Society – Roma, 10–14/09/2023
  8. Oral communication  
*Valorisation of industrial wastewater as solvent for Pd-catalysed CH arylation*  
**at:** 6<sup>th</sup> EuChemS Conference on Green and Sustainable Chemistry – Salerno, 03–06/09/2023
  9. Flash oral communication  
*Spectroscopic insight into the solvent-assisted Ag-free activation of Au(I) complexes*  
**at:** Chimica Sotto l'Albero– Bari, 19–20/12/2022
  10. Poster  
*Gold(I)-catalysed reactivity of furan-ynes with N-oxides*  
**at:** XIII Spanish-Italian Symposium on Organic Chemistry – Tarragona, 04–06/09/2022
  11. Oral communication  
*Gold(I)-catalysed divergent reactivity of furans with N-oxides: synthesis of substituted dihydropyridones*  
**at:** 1<sup>st</sup> Virtual Symposium on Pericyclic Reactions and Synthesis of Carbo- and Heterocyclic Systems – online conference, 24–25/11/2020
  12. Poster  
*Gold(I)-catalysed divergent reactivity of furans with N-oxides*  
**at:** 1<sup>st</sup> Virtual Symposium for Young Organic Chemists – online conference, 29/10/2020
  13. Poster  
*Natural deep eutectic solvents as an efficient and versatile catalytic system for the Nazarov cyclization*  
**at:** XXXIX National Congress of the Organic Chemistry Division of the Italian Chemical Society – Torino (Italy), 08–12/09/2019
  14. Oral communication  
*Natural deep eutectic solvents as an efficient catalytic system for the Nazarov cyclization*  
**at:** Merck & Elsevier Young Chemists Symposium 2018 – Rimini (Italy), 19–21/11/2018
  15. Awardee lecture – Best Poster for the Communication of Chemistry  
*Gold-catalysed intramolecular hydroarylation of heterocyclic 1,3-enynes*  
**at:** XXXVIII National Congress of the Organic Chemistry Division of the Italian Chemical Society – Milano (Italy), 09–13/09/2018
  16. Poster  
*Gold-catalysed intramolecular hydroarylation of heterocyclic 1,3-enynes*  
**at:** XXXVIII National Congress of the Organic Chemistry Division of the Italian Chemical Society – Milano (Italy), 09–13/09/2018
  17. Poster  
*Gold-catalysed hydroarylation of lactam derived enynes: easy access to polyaromatic nitrogen heterocycles*  
**at:** 28<sup>th</sup> International Conference on Organometallic Chemistry – Firenze (Italy), 15–20/07/2018

18. Poster  
*Gold(I)-catalysed transformations of heterocyclic 1,3-enynes*  
at: Italian-French Chemistry Days 2018 – Genova (Italy), 16–18/04/2018
19. Awardee lecture – GIC Prize  
*Oxidative gold catalysis: applications in synthesis*  
at: New Trends in Organic Synthesis – Milano (Italy), 27/11/2017
20. Poster  
*Gold(I)-catalysed transformations of heterocycle derived 1,3-enynes*  
at: International School on Organometallic Chemistry, XI edition – San Benedetto del Tronto (Italy), 02–06/09/2017

## Fellowships & awards

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- Dec 2023 Best Flash oral communication award  
at: Italian Photochemistry Meeting  
Italian Photochemistry Group
- Sep 2019 Best Poster award (3<sup>rd</sup> place)  
at: XXXIX National Congress of the Organic Chemistry Division of the Italian Chemical Society  
Sponsored by the European Journal of Organic Chemistry
- Sep 2018 Best Poster for the Communication of Chemistry  
at: XXXVIII National Congress of the Organic Chemistry Division of the Italian Chemical Society  
Interdivisional Group for the Diffusion of the Chemical Culture of the Italian Chemical Society
- Nov 2017 GIC Prize – Best 2017 MSc thesis on catalysis in organic synthesis  
at: New Trends in Organic Synthesis  
Interdivisional Catalysis Group (GIC) of the Italian Chemical Society
- Attendance fellowships:
- 6th EuChemS Conference on Green and Sustainable Chemistry – assigned by the Green Chemistry Group of the Italian Chemical Society, 2023
  - Chimica Sotto l'Albero - assigned by the Organic Chemistry Division of the Italian Chemical Society, 2022
  - SCI\*C School in Communication of Chemistry - assigned by the Piemonte Valle d'Aosta Section of the Italian Chemical Society, 2019
  - XXXIX National Congress of the Organic Chemistry Division of the Italian Chemical Society (CDCO2019) - assigned by the Organic Chemistry Division of the Italian Chemical Society, 2019
  - XXXVIII National Congress of the Organic Chemistry Division of the Italian Chemical Society (CDCO2018) - assigned by the Organic Chemistry Division of the Italian Chemical Society, 2018
  - Italian-French Chemistry Days 2018 (GIFC2018) - assigned by the Piemonte Valle d'Aosta Section of the Italian Chemical Society, 2018
  - XI International School of Organometallic Chemistry (ISOC2017) - assigned by Università di Camerino, 2017
  - National School of Nuclear Magnetic Resonance - assigned by the Italian Group of Discussion on Magnetic Resonance (GIDRM), 2017

## Public engagement

- 2022 – 2024 ApertaMenteChimica  
Dipartimento di Chimica, Università degli Studi di Torino. 3 editions (2022, 2023, 2024)
- 2022 – 2023 U\*Night – Notte delle Ricercatrici e dei Ricercatori  
Dipartimento di Chimica, Università degli Studi di Torino. 2 editions (2022, 2023)
- 2021 SHARPER – Notte delle Ricercatrici e dei Ricercatori  
Dipartimento di Chimica, Università degli Studi di Torino. 1 edition (2021)

## Additional employment

- Sep 2019 Staff member – CDCO2019  
Scientific conference – Organic Chemistry Division of the Italian Chemical Society
- Jun – Jul 2018 Collaborator – Didactic Laboratories  
Public engagement – Polismile, Torino
- Mar 2017 – Mar 2018 Tutor – “Four Days at the University (for teachers)”  
Public engagement event – Chemistry Department, Università degli Studi di Torino  
2 editions: 2017, 2018
- Mar 2017 Staff member – “2<sup>nd</sup> International Congress on Strigolactones”  
Scientific conference – Università degli Studi di Torino
- Sep 2015 – Sep 2016 Staff member – “Researcher’s Night”  
Public engagement event – “Agorà Scienza” Inter-University Center, Torino  
2 editions: 2015, 2016
- Jun 2014 – Jul 2015 Coordinator – Summer camp  
Volunteering – “Sacro Cuore di Gesù” parish church, Torino  
2 summers: 2014, 2015
- May 2015 Tutor – “Scientific Summer Academy”  
Public engagement event – “Agorà Scienza” Inter-University Center, Torino
- Aug – Oct 2014 Archivist  
Extra-curricular collaboration – Enrolment Office, Università degli Studi di Torino
- 2009 – present Private tutor for middle school, high school and university students

## Personal skills

- Job-related skills Organic synthesis, including reactions under inert atmosphere and at low temperature, reactions under H<sub>2</sub> or O<sub>2</sub> atmosphere.  
Purification techniques: flash column chromatography, HPLC, preparative TLC, distillation, recrystallization.  
Characterization techniques: nuclear magnetic resonance (NMR), gas chromatography-mass spectroscopy (GC-MS), electrospray ionization-mass spectroscopy (ESI-MS), infrared spectroscopy (IR), UV-Vis and fluorescence spectroscopy, specific rotation.
- Digital skills Writing software: Office suite, Endnote, Mendeley  
Scientific databases: SciFinder, Reaxys, Web Of Science  
Chemistry software: MestreNova, ChemDraw, Jeol Delta, Bruker TopSpin, Statgraphics

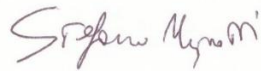
Languages

Italian: mothertongue  
English: fluent

French: intermediate  
Spanish: beginner

*I authorize the use of my personal data in compliance with the Italian legislative Decree n. 196/03 and with the GDPR (EU) 2016/679.*

Stefano Nejrotti



Faenza, 13/12/2024