■ **74** pubblicazioni su riviste internazionali

■ **2** capitoli di libro

■ **1** brevetto internazionale

■ **3** atti di convegno

■ **5** presentazioni orali su invito

■ **20** partecipazioni a convegni, seminari e meeting come relatore con un contributo orale

■ **4** partecipazioni a convegni, seminari e meeting come relatore con un poster

h-index: **23** (Scopus- ottobre 2023)

**1481** citazioni (Scopus-ottobre 2023)

**Pubblicazioni su riviste ISI:**

§: uguale contributo

1. **Mixed β-γ-Cyclodextrin Branched Polymer with Multiple Photo Chemotherapeutic Cargos**

Laneri, F.; Seggio, M.; Parisi, C.; Szabolcs, B.; Fraix, A.; Malanga, M.; Sortino, S.

ACS Applied Polymer Materials, accepted, DOI: 10.1021/acsapm.3c01157

1. **On the photobehaviour of curcumin in biocompatible hosts: The role of H-abstraction in the photodegradation and photosensitization**

Laneri, F.; Conte, C.; Parisi, C.; Catanzano, O.; Fraix, A.\*; Quaglia, F.; Sortino, S.

*J. Photochem. Photobiol*. *B*, **2023**, *245*, 112756.

1. **Red-Light-Photosensitized NO Release and Its Monitoring in Cancer Cells with Biodegradable Polymeric Nanoparticles**

Fraix, A.; § Parisi, C.; § Longobardi, G. §; Conte, C.; Pastore, A.; Stornaiuolo, M.; Graziano, A. C. E. ; Alberto, M. E. ; Frances-Monerris, A.; Quaglia, F.; Sortino, S.

*Biomacromolecules*, **2023**, *24*, 3887-3897.

1. **Different In Silico Approaches Using Heterocyclic Derivatives against the Binding between Different Lineages of SARS-CoV-2 and ACE2**

Sipala, F.; Cavallaro, G.; Forte, G.; Satriano, C.; Giuffrida, A.; Fraix, A.; Spadaro, A.; Petralia, S.; Bonaccorso, C.; Fortuna, C. G.; Ronsisvalle, S.

*Molecules*, **2023**, *28*, 3908.

1. **A Supramolecular Nanoassembly of Lenvatinib and a Green Light-Activatable NO Releaser for Combined Chemo-Phototherapy**

Laneri, F.; Licciardello, N.; Suzuki, Y.; Graziano, A. C. E.; Sodano, F.; Fraix, A.\*; Sortino, S.

*Pharmaceutics*, **2023**, *15*, 96.

1. **A molecular dyad delivered by biodegradable polymeric nanoparticles for combined PDT and NO-PDT in cancer cells**

Parisi, C.; Longobardi, G.; Graziano, A. C. E.; Fraix, A.; Conte, C.; Quaglia, F.; Sortino, S.

*Bioorganic Chemistry*, **2022**, *128*, 106050.

1. **Doxorubicin-NO Releaser Molecular Hybrid Activatable by Green Light to Overcome Resistance in Breast Cancer Cells**

Parisi, C.; Moret, F.; Fraix, A.; Menilli, L.; Failla, M.; Sodano, F.; Conte, C.; Quaglia, F.; Reddi, E.; Sortino, S.

ACS Omega, **2022**, *7*, 7452-7459.

1. **Green synthesis of near-infrared plasmonic gold nanostructures by Pomegranate extract and their supramolecular assembling with chemo and photo-therapeutics**

Seggio, M. ; Laneri, F.; Graziano, A. C. E.; Natile, M. M. ; Fraix, A.; Sortino, S.

*Nanomaterials*, **2022**, *12*, 4476.

1. **Acidochromism of donor-acceptor Stenhouse adducts in organic solvent**

Fiorentino, A.; Sachini, B.; Corra, S.; Credi, A.; Femoni, C.; Fraix, A.; Silvi, S.

*Chem. Commun.*, **2022**, *58*, 11236-11239.

1. **Enhancing the Anticancer Activity of Sorafenib through Its Combination with a Nitric Oxide Photodelivering β-Cyclodextrin Polymer**

Laneri, F.; Graziano, A. C. E.; Seggio, M.; Fraix, A.; Malanga, M.; Beni, S.; Longobardi, G.; Conte, C.; Quaglia, F.; Sortino, S.

*Molecules,* **2022**, 27, 1918.

1. **Phosphonodithioformate-amine coupling reaction: from basic discovery to application for the functionalization of liposomes**

Khalil, M.; Jeanne Dit Fouque, D.; Berchel, M.; Fraix, A.; Sortino, S.; Memboeuf, A.; Jaffres, P.-A.

*Phosphorus, Sulfur and Silicon and the Related Elements*, **2022**, *197*, 462-467.

1. **Nitric Oxide Photoreleasers with Fluorescent Reporting**

Fraix, A.; Parisi, C.; Seggio, M.; Sortino, S.

*Chemistry - A European Journal*, **2021**, *27*, 12714-12725.

1. **Phosphonodithioester-amine coupling in water: a fast reaction to modify the surface of liposomes**

Khalil, M.; Jeanne Dit Fouque, D.; Berchel, M.; Fraix, A.; Dupont, A.; Sortino, S.; Memboeuf, A.; Jaffres, P.-A.

*Organic & Biomolecular Chemistry*, **2021**, *19*, 6392-6396.

1. **Visible light-activatable cyclodextrin-conjugates for the efficient delivery of nitric oxide with fluorescent reporter and their inclusion complexes with betaxolol**

Seggio, M.; Payamifar, S.; Fraix, A.; Kalydi, E.; Kasal, P.; Catanzano, O.; Conte, C.; Quaglia, F; Sortino, S.

*New Journal of Chemistry*, ***2021***, *45*, 8449-8455.

1. **A generator of peroxynitrite activatable with red light**

Parisi, C.; § Failla, M.; § Fraix, A.; § Menilli, L.; Moret, F.; Reddi, E.; Rolando, B.; Spyrakis, F.; Lazzarato, L.; Fruttero, R.; Gasco, A.; Sortino, S.

*Chemical Science,* **2021**, *12*, 4740-4746.

1. **Development of Spirulina sea-weed raw extract/polyamidoamine hydrogel system as novel platform in photodynamic therapy: Photostability and photoactivity of chlorophyll a**

Rizzo, V.; Gubitosa, J.; Fini, P.; Fraix, A.;Sortino, S.; Agostiano, A.; Cosma, P.

*Mat. Sci. Eng. C-Mater.*, **2021,** *119*, 111593.

1. **NO release regulated by doxorubicin as the green light-harvesting antenna**

Fraix, A.;§ Parisi, C.;§ Failla, M.;§ Chegaev, K.; Spyrakis, F.; Lazzarato, L.; Fruttero, R.; Gasco, A.; Sortino, S.

*Chem. Commun.*, **2020**, *56*, 6332-6335.

1. **A high-performing metal free photoactivatable NO donor with a green fluorescent reporter**

Parisi, C.;§ Seggio, M.;§ Fraix, A.;§ Sortino, S.

*ChemPhotoChem***, 2020**, 4, 742-748.

1. **DNA-targeted NO release photoregulated by green light**

Parisi, C.;§ Fraix, A.;§ Guglielmo, S.;§Spyrakis, F.; Rolando, B.; Lazzarato, L.; Fruttero, R.; Gasco, A.; Sortino, S.

*Chem. Eur. J.*, **2020**, *26*, 13627-13633.

1. **Enhancing doxorubicin anticancer activity with a novel polymeric platform photoreleasing nitric oxide**

Sodano, F.; Cavanagh, R. J.; Pearce, A. K.; Lazzarato, L.; Rolando, B.; Fraix, A.; Abelha, T. F.; Vasey, C. E.; Alexander, C.; Taresco, V.; Sortino, S.

*Biomaterials Science*, **2020**, *8*, 1329-1344

1. **Overcoming doxorubicin resistance with lipid-polymer hybrid nanoparticles photoreleasing nitric oxide**

Fraix, A.;§ Conte, C.;§ Gazzano, E.;§ Riganti, C.; Quaglia, F.; Sortino, S.

*Molecular Pharmaceutics*, **2020**, *17*, 2135-2144.

1. **Photodegradation of antibiotics by noncovalent porphyrin-functionalized TiO2 in water for the bacterial antibiotic resistance risk management**

Gaeta, M.; Sanfilippo, G.; Fraix, A.; Sortino, G.; Barcellona, M.; Oliveri Conti, G. Fragala, M. E.; Ferrante, M.; Purrello, R.; D'Urso,A

*Int. J. Mol. Sci.,* **2020**, *21*, 3775.

1. **One-​step photochemical green synthesis of water-​dispersible Ag, Au, and Au@Ag core-​shell nanoparticles**

Perez-Lloret, M.; Fraix, A.; Petralia, S.; Conoci, S.; Tafani, V.; Cutrone, G.; Vargas-Berenguel, A.; Gref, R.; Sortino, S.

*Chem. Eur. J.*, **2019**, *25*, 14638-14643.

1. **Visible light-​activatable multicargo microemulsions with bimodal photobactericidal action and dual colour fluorescence**

Fraix, A.;§ Catanzano, O.;§ Di Bari, I.; Conte, C.; Seggio, M.; Parisi, C.; Nostro, A.; Ginestra, G.; Quaglia, F.; Sortino, S.

 *J. Mater. Chem. B*, **2019**, *7*, 5257-5264.

1. **Fluorescent nitric oxide photodonors based on BODIPY and rhodamine antennae**

Parisi, C.; Failla, M.; Fraix, A.; Rolando, B.; Gianquinto, E.; Spyrakis, F.; Gazzano, E.; Riganti, C.; Lazzarato, L.; Fruttero, R.; Gasco, A.; Sortino, S.

*Chem. Eur. J*., **2019**, *25*,11080 –11084.

1. **“Three-bullets" loaded mesoporous silica nanoparticles for combined photo/chemotherapy**

Tessaro, A. L.; Fraix A.; Pedrozo da Silva A. C.; Gazzano E.; Riganti C.; Sortino, S.

*Nanomaterials*, **2019**, *9*, 823.

1. **A calix[4]arene-based ternary supramolecular nanoassembly with improved fluoroquinolone photostability and enhanced NO photorelease**

Fraix, A.;§ Afonso, D.;§ Consoli,G. M. L.; Sortino, S.

*Photochem. Photobiol. Sci*., **2019,** *18*, 2216.

1. **A comprehensive investigation of amino grafted mesoporous silica nanoparticles supramolecular assemblies to host photoactive chlorophyll a in aqueous solution**

Rizzi, V.; Gubitosa, J.; Fini, P.; Fanelli, F.; Fraix, A.; Sortino, S.; Agostiano, A.; De Cola, L.; Nacci, A.; Cosma, P.

*J. Photochem. Photobiol*. *A*, **2019**, *377*, 149-158.

1. **A molecular hybrid producing simultaneously singlet oxygen and nitric oxide by single photon excitation with green light**

Parisi, C.; Failla, M.; Fraix, A.; Rescifina, A.; Rolando, B.; Lazzarato, L.; Cardile, V.; Graziano, A. C. E.; Fruttero, R.; Gasco, A.; Sortino, S.

*Bioorg. Chem.,* **2019,** *85*, 18-22.

1. **A phototherapeutic fluorescent** **-cyclodextrin branched polymer delivering nitric oxide**

Malanga, M.; Seggio, M.; Kirejev, V.; Fraix, A.; Di Bari, I.; Fenyvesi, E.; Ericson, M. B.; Sortino, S.

*Biomater. Sci.,* **2019**, *7*, 2272-2276.

1. **A three-color fluorescent supramolecular nanoassembly of phototherapeutics activable by two-photon excitation with near-infrared light**

Fraix, A.;§ Kirejev, V.;§ Malanga, M.; Fenyvesi, E.; Beni, S.; Ericson, M. B.; Sortino,S.

*Chem. Eur.J.,* **2019,** *25*, 7091-7095.

1. **Singlet oxygen photo-​production by perylene bisimide derivative Langmuir-​Schaefer films for photodynamic therapy applications**

Semeraro, P.; Syrgiannis, Z.; Bettini, S.; Giancane, G.; Guerra, F.; Fraix, A.; Bucci, C.; Sortino, S.; Prato, M.; Valli, L.

‎*J. Colloid. Interface Sci.*, **2019**, *553*, 390-401.

1. **Combination of PDT and NOPDT with a Tailored BODIPY Derivative**

Lazzarato, L.; Gazzano, E.; Blangetti, M.; Fraix, A.; Sodano, F.; Picone, G. M.; Fruttero, R.; Gasco, A.; Riganti, C.; Sortino, S.

*Antioxidants* **2019**, *8,* 531.

1. **Combination of PDT photosensitizers with NO photodonors**

Fraix, A.; Sortino, S.

*Photochem. Photobiol. Sci.,* **2018***, 17*, 1709-1727.

1. **Light-controlled simultaneous "on demand" release of cytotoxic combinations for bimodal killing of cancer cells**

Tessaro, A. L.; Fraix, A.; Failla, M.; Cardile, V.; Graziano, A. C. E.; Estevao, B. M.; Rescifina, A.; Sortino, S.

*Chem. Eur. J*., **2018**, *24*, 7664-7670.

1. **Monitoring the release of a NO photodonor from polymer nanoparticles via Forster resonance energy transfer and two-​photon fluorescence imaging**

Conte, C.;§ Fraix, A.;§ Thomsen, H.; Ungaro, F.; Cardile, V.; Graziano, A. C. E.; Ericson, M. B.; Quaglia, F.; Sortino, S.

*J. Mat. Chem. B*, **2018**, *6*, 249-256.

1. **A molecular hybrid for mitochondria-targeted NO photodelivery**

Sodano, F.; Gazzano, E.; Fraix, A.; Rolando, B.; Lazzarato, L.; Russo, M.; Blangetti, M.; Riganti, C.; Fruttero, R.; Gasco, A.; Sortino, S.

*ChemMedChem*, **2018**, *13*, 87-96.

1. **Shedding light on surface exposition of poly(ethylene glycol) and folate targeting units on nanoparticles of poly(ε-caprolactone) diblock copolymers: Beyond a paradigm**

Venuta, A.; Moret, F.; Dal Poggetto, G.; Esposito, D.; Fraix, A.; Avitabile, C.; Ungaro, F.; Malinconico, M.; Sortino, S.; Romanelli, A.; Laurienzo, P.; Reddi, E.; Quaglia, F.

*Eur. J. Pharm. Sci*., **2018,** *111*, 177-185

1. **Multivalent mesoporous silica nanoparticles photo-delivering nitric oxide with carbon dots as fluorescence reporters**

Afonso, D.; Valetti, S.; Fraix, A.; Bascetta, C.; Petralia, S.; Conoci, S.; Feiler, A.; Sortino, S.

*Nanoscale,* **2017**, *9*, 13404-13408.

1. **Novel sigma receptor ligand-​nitric oxide photodonors: molecular hybrids for double-​targeted antiproliferative effect**

Amata, E.; Dichiara, M.; Arena, E.; Pittala, V.; Pistara, V.; Cardile, V.; Graziano, A. C. E.; Fraix, A.; Marrazzo, A.; Sortino, S.; Prezzavento, O.

*J. Med. Chem.*, **2017**, *60*, 9531-9544.

1. **Poly(ethylene oxide)/hydroxypropyl-β-cyclodextrin films for oromucosal delivery of hydrophilic drugs**

D'Angelo, I.; Fraix, A.; Ungaro, F.; Quaglia, F.; Miro, A.

 *Int. J. Pharm.,* **2017,** *531*, 606-613.

1. **A nonmetal-containing nitric oxide donor activated with single-photon green light**

Blangetti, M.;§ Fraix, A.;§ Lazzarato, L.; Marini, E.; Rolando, B.; Sodano, F.; Fruttero, R.; Gasco, A.; Sortino, S.

 *Chem. Eur. J.,* **2017***, 23*, 9026-9029.

1. **Light-​regulated NO release as a novel strategy to overcome doxorubicin multidrug resistance.**

Chegaev, K.;§ Fraix, A.;§ Gazzano, E.; Abd-Ellatef, G. E. F.; Blangetti, M.; Rolando, B.; Conoci, S.; Riganti, C.; Fruttero, R.; Gasco, A.; Sortino, S.

*ACS Med. Chem. Lett.*, **2017**, *8*, 361-365.

1. **Pluronic P123​/F127 mixed micelles delivering sorafenib and its combination with verteporfin in cancer cells.**

Pellosi, D. S.; Moret, F.; Fraix, A.; Marino, N.; Maiolino, S.; Gaio, E.; Hioka, N.; Reddi, E.; Sortino, S.; Quaglia, F.

*Int. J. Nanomedicine*, **2016**, *11*, 4479-4494.

1. **Supramolecular activation of the photodynamic properties of porphyrinoid photosensitizers by calix[4]​arene nanoassemblies.**

Di Bari, I.; Fraix, A.; Picciotto, R.; Blanco, A. R.; Petralia, S.; Conoci, S.; Granata, G.; Consoli, G. M. L.; Sortino, S.

*RSC Adv.*, **2016**, *6*, 105573-105577.

1. **NO photoreleaser-​deoxyadenosine and -​bile acid derivative bioconjugates as novel potential photochemotherapeutics.**

Navacchia, M. L.; Fraix, A.; Chinaglia, N.; Gallerani, E.; Perrone, D.; Cardile, V.; Graziano, A. C. E.; Capobianco, M. L.; Sortino, S.

*ACS Med. Chem. Lett*. **2016**, *7*, 939-943.

1. **Light-​tunable generation of singlet oxygen and nitric oxide with a bichromophoric molecular hybrid: a bimodal approach to killing cancer cells.**

Fraix, A.; Blangetti, M.; Guglielmo, S.; Lazzarato, L.; Marino, N.; Cardile, V.; Graziano, A. C. E.; Manet, I.; Fruttero, R.; Gasco, A.; Sortino.S.

*ChemMedChem*, **2016**, *11*, 1371-1379.

1. **Supramolecular polymer networks based on calix[5]arene chained poly(*p*-phenyleneethynylene) and C60 fulleropyrrolidine.**

[Fraix](http://www.tandfonline.com/author/Fraix%2C%2BAurore), A.; [Torrisi](http://www.tandfonline.com/author/Torrisi%2C%2BVanna), V.; [Marletta](http://www.tandfonline.com/author/Marletta%2C%2BGiovanni), G.; [Sortino](http://www.tandfonline.com/author/Sortino%2C%2BSalvatore), S.; [Mineo](http://www.tandfonline.com/author/Mineo%2C%2BPlacido%2BG), P. G.; [Tomaselli](http://www.tandfonline.com/author/Tomaselli%2C%2BGaetano%2BA), G. A.;  [Ballistreri](http://www.tandfonline.com/author/Ballistreri%2C%2BFrancesco%2BP), F. P.; [Trusso Sfrazzetto](http://www.tandfonline.com/author/Trusso%2BSfrazzetto%2C%2BGiuseppe),G.; [Pappalardo](http://www.tandfonline.com/author/Pappalardo%2C%2BAndrea), A.

*Supramol. Chem*., **2016**, *28*, 485-492.

1. **Molecular interactions, characterization and photoactivity of chlorophyll a/chitosan/2-HP-b-cyclodextrin composite ﬁlms as functional and active surfaces for ROS production**.

Rizzi, V.; Fini, P.; Fanelli, F.; Placido, T.; Semeraro, P.; Sibillano, T.; Fraix, A.; Sortino, S.; Agostiano, A.; Giannini, C.; Cosma, P.

*Food Hydrocolloids,* **2016**, *58*, 98-112.

1. **Polymer nanoparticles with electrostatically loaded multicargo for combined cancer phototherapy.**

Fraix, A.; Manet, I.; Ballestri, M.; Guerrini, A.; Dambruoso, P.; Sotgiu, G.; Varchi, G. Camerin, M.; Coppellotti, O.; Sortino, S.

*J. Mater. Chem. B,* **2015**, *3*, 3001-3010.

1. **Photoactivable platforms for nitric oxide delivery with fluorescence imaging.**

Fraix, A.; Sortino, S.

*Chem. Asian J.,* **2015**, *10*, 1116-1125.

1. **Polystyrene nanofiber material for visible-light-driven dual antibacterial action via simultaneous photogeneration of NO and O2 (1g).**

Dolansky, J.; Henke, P.; Kubat, P.; Fraix, A.; Sortino, S.; Mosinger, J.

*ACS Appl. Mater. Inter*., **2015**, *7*, 22980-22989.

1. **Rose bengal-photosensitized oxidation of 4-thiothymidine in aqueous medium: evidence for the reaction of the nucleoside with singlet state oxygen.**

Rizzi, V.; Losito, I.; Ventrella, A.; Fini, P.; Fraix, A.; Sortino, S.; Agostiano, A.; Longobardi, F.; Cosma, P.

*Phys. Chem. Chem. Phys*., **2015**, *17*, 26307-26319.

1. **Synthesis, characterization and photo-bactericidal activity of silanized xanthene-modified bacterial cellulose membranes.**

Hettegger, H.; Gorfer, M.; Sortino, S.; Fraix, A.; Bandian, D.; Rohrer, C.; Harreither, W.; Potthast, A.; Rosenau, T.

*Cellulose*, **2015**, *22*, 3291-3304.

1. **Supramolecular nanoreactors for intracellular singlet-oxygen sensitization**.

Swaminathan, S.; Fowley, C. Thapaliya, E. R.; McCaughan, B.; Tang, S.; Fraix, A.; Captain, B.; Sortino, S.; Callan, J. F.; Raymo, F. M.

*Nanoscale,* **2015**, *7*, 14071-14079.

1. **Hyaluronan-decorated polymer nanoparticles targeting the CD44 receptor for the combined photo/chemo-therapy of cancer.**

Maiolino, S.; Moret, F.; Conte, C.; Fraix, A.; Tirino, P.; Ungaro, F.; Sortino, S.; Reddi, E.; Quaglia, F.

*Nanoscale,* **2015**, *7*, 5643-5653.

1. **Carbon quantum dot-NO photoreleaser nanohybrids for two-photon phototherapy of hypoxic tumors.**

Fowley, C.; McHale, A. P.; McCaughan, B.; Fraix, A.; Sortino, S.; Callan, J. F.

*Chem. Commun.,* **2015**, *51*, 81-84.

1. **A multicomponent gel for nitric oxide photorelease with fluorescence reporting.**

Fraix, A.; Kandoth, N.; Gref, Ruxandra; Sortino, S.

*Asian J. Org. Chem.,* **2015**, *4*, 256-261.

1. **A multi-photoresponsive molecular hybrid for dual-modal photoinactivation of cancer cells.**

Fraix, A.; Guglielmo, S.; Cardile, V.; Graziano, A.C.E.; Gref, R.; Rolando, B.; Fruttero, R.; Gasco, A.; Sortino, S.

*RSC Adv.,* **2014**, *4*, 44827-44836.

1. **A multi-photoresponsive supramolecular hydrogel with dual-color fluorescence and dual-modal photodynamic action**.

Fraix, A.; Gref, R.; Sortino, S.

*J. Mat. Chem. B*, **2014**, ***2***, 3443-3449.

1. **Photoresponsive polymer nanocarriers with multifunctional cargo**.

Swaminathan, S.; Garcia-Amorós, J.; Fraix, A.; Kandoth, N.; Sortino, S.; Raymo, F.M.

*Chem. Soc. Rev.,* **2014**, *43*, 4167-4178.

1. **Nitric oxide photoreleasing nanoconstructs with multiple photofunctionalities**

Fraix, A.; Kandoth, N.; Sortino, S.
*Specialist Periodical Reports in Photochemistry: volume 41,* **2013**, 302–318.

1. **A multifunctional bichromophoric nanoaggregate for fluorescence imaging and simultaneous photogeneration of RNOS and ROS**.

Fraix, A.; Gonçalves, A.R.L.; Cardile, V.; Graziano, A.C.E.; Theodossiou, T.A.; Yannakopoulou, K.; Sortino, S.
*Chem. Asian J.,* **2013**, *8*, 2634-2641.

Back Cover Page.

1. **An engineered nanoplatform for bimodal anticancer phototherapy with dual-color fluorescence detection of sensitizers**

Fraix, A.; Kandoth, N.; Manet, I.; Cardile, V.; Graziano, A.C.E.; Gref, R.; Sortino, S.
*Chem. Commun*., **2013**, *49*, 4459-4461.

Inside back cover page

1. **Arsonium-containing lipophosphoramides, poly-functional nano-carriers for simultaneous antibacterial action and eukaryotic cell transfection**.

Le Gall, T.; Berchel, M.; Le Hir, S.; Fraix, A.; Salaün, J.Y.; Férec, C.; Lehn, P.; Jaffrès, P.A.; Montier, T.
*Adv. Healthcare Mater.*, **2013**, *2*, 1513-1524.

1. Cationic lipophosphoramidates with two disulfide motifs: synthesis, behavior in reductive media and gene transfection activity.

Fraix, A.; Le Gall, T.; Berchel, M.; Denis, C.; Lehn, P.; Montier, T.; Jaffrès, P.A.
*Org. Biomol. Chem.*, 2013, *11*, 1650-1658.

1. Photoinduced fluorescence activation and nitric oxide release with biocompatible polymer nanoparticles.

Deniz, E.; Kandoth, N.; Fraix, A.; Cardile, V.; Graziano, A.C.E.; Lo Furno, D.; Gref, R.; Raymo, F.M.; Sortino, S.
*Chem. Eur. J.,* 2012, *18*, 15782-15787.

1. **A host-guest supramolecular complex with photoregulated delivery of nitric oxide and fluorescence imaging in cancer cells**.

Kandoth, N.; Malanga, M.; Fraix, A.; Jicsinszky, L.; Fenyvesi, E.; Parisi, T.; Colao, I.; Sciortino, M. T.; Sortino, S.
*Chem. Asian J.,* **2012**, *7,* 2888-2894.

1. **Gene transfection properties of a lipophosphoramidate derivative with two phytanyl chains.**

Lindberg,M.; Carmoy,N.; Le Gall,T.;Fraix,A.; Berchel,M.; Lorilleux,C.; Couthon-Gourvès,H.; Bellaud, P.; Fautrel,A.; Jaffrès,P.A.; Lehn,P.; MontierT.

*Biomaterials*, **2012**, *33*, 6240-6253.

1. **Lipothiophosphoramidates for gene delivery: critical role of cationic polar headgroup.**

Fraix, A.; Montier, T.; Le Gall, T.; Sevrain, C. M.; Carmoy, N.; Lindberg, M. F.; Lehn, P.; Jaffrès, P.A.
*Org. Biomol. Chem.*, **2012**, *10,* 2051-2058.

1. **Cationic lipo-thiophosphoramidates for *in vitro* gene delivery: synthesis, physico-chemical characterizations and transfection assays - comparison with lipo-phosphoramidates**.

Fraix, A.; Montier, T.; Carmoy, N.; Loizeau, D.; Burel-Deschamps, L.; Le Gall, T.; Giamarchi, P.; Couthon-Gourvès, H.; Haelters, J.P.; Lehn, P.; Jaffrès, P.A.
*Org. Biomol. Chem.,* **2011***, 9,* 2422-2432.

1. **Construction of monoanionic*S,N,S*-pincer ligand with a pyrrole core by sequential [1,2] phospho-fries rearrangement. Characterization of a palladium and silver coordination complexes.**

Fraix, A.; Lutz, M.; Spek, A. L.; Klein Gebbink, R. J. M.; van Koten, G.; Salaün, J.Y.; Jaffrès, P.A.
*Dalton Trans*., **2010**, *39*, 2942-2946.

1. **Highly efficient gene transfer into hepatocyte-like HepaRG cells: new means for drug metabolism and toxicity studies.**

Laurent, V.; Fraix, A.; Montier, T.; Cammas-Marion, S.; Ribault, C.; Benvegnu, T.; Jaffrès, P.A.; Loyer, P.

*Biotechnol. J.,* **2010**, *5*, 314-320.

1. **Synthesis of *O,O*-Diethyl arylthiophosphonate from *O*-Aryl-*O,O*-diethylthiophosphate.**

Dieng, T.; Fraix, A.; Salaün, J.Y.; Dez, I; Klein Gebbink, R. J. M.; van Koten, G.; Jaffrès, P.A.
*Synlett,* **2008**, *20*, 3121-3124.

**Capitolo di libro:**

1. **Chapter Five - Light-triggered unconventional therapies with engineered inorganic nanoparticles**

Fraix, A.; Sortino, S.

In *Advances in Inorganic Chemistry* (Eds. Peter C. Ford, Rudi van Eldik), volume 80, **2022**, Pages 171-203 (Elsevier, Cambridge, United States)

1. **Phototherapeutic release of nitric oxide with engineered nanoconstructs.**

Fraix, A.; Marino, N.; Sortino, S.

*Top.Curr. Chem.,***2015**, *370*, 225-257.

**Brevetto:**

1. **Lipothiophosphoramides for gene delivery.**

Jaffrès, P.A.; Fraix, A.; Montier, T.; Lehn, P.
*US patent* **2010** *application*, 61/389,959, PCT/EP2011/06742

**Atti di convegno:**

1. **Study of the stability of O,O -dialkyl- O -arylthiophosphate: evidence of the formation of O,S -dialkyl- O –arylphosphate.**

Le Corre, S.S.; Fraix, A.; Berchel, M.; Jaffrès, P.-A.

 *Phosphorus Sulfur Silicon Relat. Elem*., **2015**, *190*, 747-750.

1. **Synthesis of aryl-thiophosphonates via a [1,2] or [1,3] phospho-fries rearrangement.**

Denis, C.; Fraix, A.; Berchel, M.; Salaün, J.-Y.; Jaffrès, P.-A.

*Phosphorus Sulfur Silicon Relat. Elem*., **2011**, *186*, 790-791.

1. **New lipo-phosphoramidates for gene delivery.**

Jaffrès, P.-A.; Fraix, A.; Lorilleux, C.; Berchel, M.; Couthon-Gourvès, H.; Haelters, J.-P., Yaouanc; J.-J., Burel, L.; Giamarchi, P.; Midoux, P.; Montier, T.; Lehn, P.

*Phosphorus Sulfur Silicon Relat. Elem*., **2011**, *186*, 918-920.

**Invited talks:**

1. **Photoactivatable release of unconventional therapeutics**

Invited Keynote lecture, XLVIII Italian Conference of Inorganic Chemistry (Pisa-Italy)

6 settembre 2022

1. **A Three-Color Fluorescent Supramolecular Nanoassembly for Bimodal Phototherapy Imaged by Two-Photon Excitation with a Single NIR Light**

Szejtli-award lecture, 20th International Cyclodextrin Symposium (Giardini Naxos – Italy)

16 giugno 2022

1. **Multi-photoresponsive systems for therapeutic applications**

JED3M- Brest (France)

19 febbraio 2019

1. **Multi-photoresponsive systems for therapeutic applications**

Seminario CEMCA-UMR 6521- Université de Bretagne Occidentale (France)

2 maggio 2018

1. **Utilisation de l’ADN comme médicament, développement de nouveaux vecteurs phospholipidiques.**

Sessione pubblica dell’Accademia delle Scienze Francese (Rennes – France)

13 maggio 2014

**Partecipazione come relatore a convegni con una presentazione orale:**

1. **New Generator of Peroxynitrite Activatable with Red Light**

Fraix, A.; Parisi, C.; Failla, M.; Reddi, E.; Lazzarato, L.; Sortino, S.

28th PhotoIUPAC, Amsterdam (Netherlands), luglio 2022.

1. **Innovative Photoactive Liposomes for Doxorubicin Delivery**

Fraix, A.; Sortino, S.; Graziano, A.C.E.; Seggio, M.

International conference on Photochemistry, luglio 2021, Virtual.

1. **“Three-bullets” loaded mesoporous silica nanoparticles for combined photo/chemotherapy**

Fraix A.; Tessaro, A. L.; Pedrozo da Silva A. C.; Gazzano E.; Riganti C.; Sortino, S.

NanoBio&Med 2019 International Conference, Barcelona (Spain), novembre 2019.

1. **A three-color fluorescent supramolecular nanoassembly for bimodal phototherapy imaged by two-photon excitation with a single NIR light**

Fraix, A.; Kirejev,V.; Malanga, M:; Ericson M: B.; Sortino, S.

UK-IT joint meeting on Photochemistry 2019, Lipari (Italy), giugno 2019.

**Premio per la migliore presentazione orale**

1. **Light-regulated NO release as a novel strategy to overcome doxorubicin multidrug resistance**

Fraix, A.; Chegaev, K.; Gazzano, E.; Abd-Ellatef, G. E. F.; Blangetti, M.; Rolando, B.; Conoci, S.; Riganti, C.; Fruttero, R.; Gasco, A.; Sortino, S.

27th PhotoIUPAC Symposium, Dublin (Ireland), luglio 2018.

1. **Light-regulated NO release as a novel strategy to overcome doxorubicin multidrug resistance**

Fraix, A.; Chegaev, K.; Gazzano, E.; Abd-Ellatef, G. E. F.; Blangetti, M.; Rolando, B.; Conoci, S.; Riganti, C.; Fruttero, R.; Gasco, A.; Sortino, S.

Congresso Congiunto Sicilia-Calabria SCI 2018, Catania (Italy), febbraio 2018

1. **Core-shell polymer nanoparticles for combined photo/chemotherapy of cancers overexpressing CD44-receptor.**

Maiolino,S.; Moret,F.; Conte,C.; Fraix,A.; Tirino,P.; Ungaro,F.; Reddi,E.; Sortino,S.; Quaglia, F.

 Italian Photochemistry meeting 2015, Bologna (Italy), dicenbre 2015.

1. **Polymer nanoparticles with electrostatically loaded multicargo for combined cancer phototherapy.**

Fraix, A.; Manet, I.; Ballestri, M.; Guerrini, A.; Dambruoso, P.; Sotgiu, G.; Varchi, G.; Camerin, M.; Coppellotti, O.; Sortino, S.

NanoBioApp, Barcelona (Spain), settembre 2015.

1. **Multi-photoresponsive supramolecular hydrogels with therapeutic and imaging properties.**

Fraix, A.; Gref,R.; Sortino, S.

Italian photochemistry meeting, Milan (Italy), novembre 2014.

1. **A multifunctional bichromophoric nanoaggregate for fluorescence imaging and simultaneous photogeneration of RNOS and ROS.**

Fraix A; Gonçalves A.R.L.; Cardile V.; Graziano A.C.E.; Theodossiou T. A.; Yannakopoulou K.; Sortino S.

Italian photochemistry meeting, Potenza (Italy), novembre 2013.

1. **An engineered nanoplatform for bimodal anticancer phototherapy with dual color fluorescence detection of sensitizers.**

Fraix A.; Kandoth N.; Manet, I.; Cardile, V.; Graziano, A.C.E.; Gref, R.; Sortino, S.

26th International Conference on Photochemistry, Leuven (Belgium), luglio2013.

1. **Photoactivated multimodal therapy based on CD-nanoparticles, last microscopic imaging and new systems development.**

Fraix A.; Kandoth N.; Manet, I.; Cardile, V.; Graziano, A.C.E.; Gref, R.; Sortino, S.

CYCLON 6th Scientific meeting, Paris (France), ottobre 2012.

1. **Overview of our recent realizations in the development of new cyclodextrin-based nanoparticles for photoactivated multimodal therapy.**

Fraix A.; Kandoth N.; Manet, I.; Cardile, V.; Graziano, A.C.E.; Gref, R.; Sortino, S.

CYCLON 5th Scientific meeting, Reykjavik (Iceland), giugno 2012.

1. **Cyclodextrin-based polymeric nanoparticles for photoactivated multimodal therapy.**

Fraix A.; Kandoth N.; Gref R.; Sortino S.

CRS Nordic chapter, Reykjavik (Iceland), giugno 2012.

1. **New cationic lipids for gene delivery.**

Fraix, A.; Montier, T.; Laurent, P.; Yaouanc, J.J.; Couthon-Gourvès, H.; Haelters, J.P.; Lehn, P.; Jaffrès, P.A.
Symposium "Sustainable Chemistry & Related Areas", Rennes (France), febbraio 2010.

1. **Nouveaux phospholipides soufrés pour une application en transfert de gènes.**

Fraix, A.; Montier, T.; Yaouanc, J.J.; Couthon-Gourvès, H.; Haelters, J.P.; Lehn, P.; Jaffrès, P.A.

Journée de doctorants et post-doctorants en Biologie Santé en Bretagne, Brest (France), giugno 2011.

1. **Nouveaux phospholipides soufrés pour une application en transfert de gènes.**

Fraix, A.; Le Gall, T.; Montier, T.; Yaouanc, J.J.; Couthon-Gourvès, H.; Haelters, J.P.; Lehn, P.; Jaffrès, P.A.
Journées scientifiques de la S.C.F. Bretagne-Pays de la Loire, Noirmoutier (France), giugno 2011.

1. **Nouveaux phospholipides pour la vectorisation d’acides nucléiques.**

Fraix, A.; Le Gall, T.; Montier, T.; Yaouanc, J.J.; Couthon-Gourvès, H.; Haelters, J.P.; Lehn, P.; Jaffrès, P.A.

Séminaire de l’UMR 6521, Brest (France), dicembre 2009.

1. **Nouveaux lipides cationiques pour la vectorisation d’ADN**

Fraix, A.; Montier, T.; Laurent, P.; Yaouanc, J.J.; Couthon-Gourvès, H.; Haelters, J.P.; Lehn, P.; Jaffrès, P.A.
SECO 46, La Rochelle (France), maggio 2009.

1. **Nouveaux lipides cationiques pour la transfection de cellules hépatiques**

Fraix, A.; Laurent, V.; Loyer, P.; Jaffrès, P.A.; Yaouanc, J.J.; Montier, T.; Lehn, P.
Journées scientifiques de la S.C.F. Bretagne-Pays de la Loire, Trégastel (France), maggio 2009.

**Partecipazione come relatore a convegni con un poster:**

1. **Study of Curcumin Photosensitizing Properties in Biocompatible Delivery**

Fraix, A.; Lecuyer, T.; Conte, C.; Catanzano, O.; Quaglia, F.; Sortino, S.

PDT-PDD 2022: Photodynamic Therapy and Photodiagnosis update 2022, Nancy (France), Ottobre 2022.

1. **A fluorescent molecular hybrid for bimodal phototherapy.**

Fraix, A.; Guglielmo, S.; Gasco, A.; Fruttero, R.; Gref, R.; Cardile, V.; Graziano, A.C.E.; Sortino, S.

XXVth IUPAC Chemistry, Bordeaux (France), luglio 2014.

1. **New biosensitive cationic lipids for gene delivery.**

Fraix, A.; Le Gall, T.; Montier, T.; Yaouanc, J.J.; Couthon-Gourvès, H.; Haelters, J.P.; Lehn, P.; Jaffrès, P.A.
MIS 2011, Quimper (France), maggio 2011.

1. **New biosensitive cationic lipids for gene delivery.**

Fraix, A.; Le Gall, T.; Montier, T.; Yaouanc, J.J.; Couthon-Gourvès, H.; Haelters, J.P.; Lehn, P.; Jaffrès, P.A.

BOSS XIIth, Namur (Belgium), luglio 2010.