

Dr Nikolaos Tsoureas



Assistant Professor

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EDUCATION

- 2001 Bachelor in Chemistry, National and Kapodistrian University of Athens
- 2005 Ph.D. in Chemistry; School of Chemistry, University of Southampton, United Kingdom. Title: "Synthesis of Phosphine and Pyridine Functionalised N-heterocyclic carbene complexes of Platinum Group Metals"

RESEARCH FIELDS

- (i) Proton Coupled Electron Transfer and its application in small molecule activation, inorganic synthesis and catalysis.
- (ii) Synthesis of organometallic and coordination complexes of the transition metals and the f-block series (lanthanides and actinides) in unusual formal oxidation states and geometries and their application in small molecule activation (N₂ fixation, CO₂ amelioration, CO activation) and molecular magnetism.
- (iii) Electrochemistry of organometallic complexes and electro-catalysis.
- (iv) Chemistry of boroles and bismuth.
- (v) Single crystal X-ray crystallography and molecular structure.

EDUCATIONAL EXPERIENCE

UNDERGRADUATE COURSES

- General and Inorganic Chemistry Teaching Labs / Mandatory / Department of Chemistry
- Organometallic Chemistry / Elective / Department of Chemistry
- X-ray Crystallography – From Spots and Rings to Structures / Elective / Department of Chemistry

GRADUATE COURSES

- Inorganic Chemistry Laboratory/ Department of Chemistry: Inorganic Chemistry and its Application in Industry/ Inorganic Synthesis and Analysis
- Masters in Teaching of Chemistry (DI.CHE.NET)/ Department of Chemistry/Nuclear Magnetic Resonance.

DISTINCTIONS / SCHOLARSHIPS

- ISACS 2017 – Challenges in Inorganic Chemistry (2nd poster award)

RESEARCH GRANTS

- FIRST ROW TRANSITION METAL COMPLEXES IN UNUSUAL GEOMETRIES (F.I.R.T.M.U.G.) / Dr Nikolaos Tsoureas/ €5000/ 1 YEAR
- Concerted Proton and Electron Transfer in Inorganic Synthesis and Catalysis: Towards Methane Valorisation (CEPTr)/ Funding: H.F.R.I./ €186604/ 2 YEARS

- Low Valent Bismuth Complexes for Small Molecule Activation (Bi.S.M.A.)/ Funding: Royal Society of Chemistry (RSC)/ £5000/ 1 year

REVIEWER OF SCIENTIFIC JOURNALS

Inorganic Chemistry, Dalton Transaction, Chemical Communications, Journal of Organometallic Chemistry, Inorganics, Molecules

EDITOR OF BOOKS AND SPECIAL VOLUMES

Guest Editor Special Issue of Inorganics 'Organometallic Complexes for Small Molecule Activation'

PATENTS

ADDITIONAL INFORMATION

- Presentations at conferences: **17 (15 of which selected or invited oral presentations)**
- Supervision of doctoral theses: **0**
- Supervision of graduate students: **1**
- Supervision of undergraduate students: **3**
- PI in Research Programs: **3**

SELECTED PUBLICATIONS (Title of the publication acts as a web-link)

Chapters in Books:

[Arene Complexes of the Group 3 and Lanthanides](#) *Comprehensive Organometallic Chemistry IV*, 2022, **4**, 405-459 **Nikolaos Tsoureas** and F. Geoffrey N. Cloke (Theme Editors: Prof Stephen T. Liddle and Dr David P. Mills)

Selected Publications:

2022

[Thorium- and Uranium-Mediated C–H Activation of a Silyl-Substituted Cyclobutadienyl Ligand](#) **Nikolaos Tsoureas**, Thayalan Rajeshkumar, Oliver P. E. Townrow, Laurent Maron*, and Richard A. Layfield* *Inorg. Chem.*, 2022, **61**, 20629.

[Reactions of a Bis\(pentalene\)ditanium complex with alkenes; the molecular structure of the butadiene complex \$\[Ti_2\(\mu: \eta^5, \eta^5-Pn^{++}\)_2\(\mu: \eta^2, \eta^2-s-trans-C_4H_6\)\] \(Pn^{++} = 1,4-\(Si^iPr_3\)_2-C_8H_4\]\$](#) Matthew Molloy, Alexander F.R. Kilpatrick, **Nikolaos Tsoureas**, F. Geoffrey N. Cloke *Polyhedron*, 2022, **212**, Article 115574.

2021

[Synthesis, bonding properties and ether activation reactivity of cyclobutadienyl-ligated hybrid uranocenes](#) **Nikolaos Tsoureas**, Akseli Mansikkamäki and Richard A. Layfield *Chem. Sci.*, 2021, **12**, 2948-2954.

2020

[Ethene Activation and Catalytic Hydrogenation by a Low-Valent Uranium Pentalene Complex](#) **Nikolaos Tsoureas**, Laurent Maron, Alexander F. R. Kilpatrick, Richard A. Layfield and F. Geoffrey N. Cloke *J. Am. Chem. Soc.*, 2020, **142**, 89-92.

[Uranium\(IV\) cyclobutadienyl sandwich compounds: synthesis, structure and chemical bonding](#) **Nikolaos Tsoureas**, Akseli Mansikkamäki and Richard A. Layfield *Chem. Commun.*, 2020, **56**, 944-947.

[Isolation of a Perfectly Linear Uranium\(II\) Metallocene](#) Fu-Sheng Guo, **Nikolaos Tsoureas**, Guo-Zhang Huang, Ming-Liang Tong, Akseli Mansikkamäki, Richard A. Layfield *Angew. Chemie Int. Ed.*, 2020, **59**, 2299-2303.

2018

[Bis\(pentalene\)ditanium chemistry: C-H, C-X and H-H bond activation](#) **Nikolaos Tsoureas**, Jennifer C. Green^{tc} and F. Geoffrey N. Cloke *Dalton Trans.* 2018, **47**, 14531-14539.

[Trimerisation of carbon suboxide at a di-titanium centre to form a pyrone ring system](#) **Nikolaos Tsoureas**, Jennifer C. Green,^{tc} F. Geoffrey N. Cloke,^s H. Puschmann,^c S. Mark Roe,^c G. Tizzard^c *Chem Sci.*, 2018, **9**, 5008-5014.

[Activation of carbon suboxide \(C₃O₂\) by U\(III\) to form a cyclobutane-1,3-dione ring](#) **Nikolaos Tsoureas** and F. Geoffrey N. Cloke *Chem. Commun.*, 2018, **54**, 8830-8833.

2017

[C-H and H-H activation at a di-titanium centre.](#) **Nikolaos Tsoureas**, Jennifer C. Green,^{tc} F. Geoffrey N. Cloke^s *Chem. Commun.*, 2017, **53**, 13117-12120.