Przemysław Gaweł

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Edukacja

2012 - 2015 Doktorat – Fizyczna Chemia Organiczna, ETH Zurich, Switzerland.

Promotor: Prof. François Diederich, Obrona: 23.09.2015.

Tytuł: *Functional Cumulene-Based Synthetic Molecular Materials.*

2006 - 2011 Magister Chemii w ramach MISMaP (Międzywydziaowe Indywidualne Studia Matematyczno-Przyrodnicze), Uniwersytet Warszawski, Polska.

Promotor: Prof. Tomasz Bauer.

Tytuł: Pochodne D-glukozaminy jako ligandy w katalizowanej kompleksami irydu asymetrycznej reakcji podstawienia allilowego.

2006 - 2009 Licencjat z Biotechnologii w ramach MISMaP (Międzywydziaowe Indywidualne Studia Matematyczno-Przyrodnicze), Uniwersytet Warszawski, Polska.

Promotor: Dr. Monika Adamczyk-Poplawska.

Tytuł: *Rola systemu restrykcji i modyfikacji NgoAV z N.gonorrhoeae w globalnej ekspresji genów: konstrukcja mutanta NgoAV-.*

Zatrudnienie

01.2021-present **Kierownik Zespołu w Instytucie Chemiii Organicznej Polskiej Akademii Nauk**

- Zarządzanie niezależną grupą badawczą.
- Badania i rozwój organicznych materiaów elektronicznych.

09.2019-12.2020 **Senior Scientist w Cambridge Display Technology a Sumitomo Chemical Group Company**

- Zarządzanie projektami badawczymi od etapu projektowania do dostarczenia.

11.2015 – 08.2019 **Postdoc w grupie Prof. Harrego L. Andersona na Uniwersytecie Oxfordzkim, Wielka Brytania**

- Pierwszy dowód struktury cyklo[18]carbonu
- Finansowane przez Postdoc.Mobility Fellowship Szwajcarskiej Fundacji Nauki

01.2012 – 10.2015 **Doktorat w ETH Zürich, w grupie Prof. François Diedericha, Szwajcaria**

- Rozwój materiałów funkcjonalnych opartych na kumulenach

Publikacje

1. **P. Gawel**, S. Woltering, Y. Xiong, K. Christensen, H. L. Anderson, *Angew. Chem. Int. Edi.*, **2020** https://doi.org/10.1002/anie.202013623. Masked Alkyne Equivalents for the Synthesis of Mechanically Interlocked Polyynes.
2. S. L. Woltering, **P. Gawel**, K. E. Christensen, A. L. Thompson, H. L. Anderson, *J. Am. Chem. Soc.* **2020**, *142*, 13523-13532. Photochemical Unmasking of Polyyne Rotaxanes.
3. L. M. Scriven, K. Kaiser, F. Schulz, A. J. Sterling, S. L. Woltering, **P. Gawel**, K. E. Christensen, H. L. Anderson, L. Gross, *J. Am. Chem. Soc.* **2020**, *142*, 12921-12924. Synthesis of Cyclo[18]carbon via Debromination of $C_{18}Br_6$.

4. K. Kaiser, L. M. Scriven, F. Schulz, P. Gawel,* L. Gross,* H. L. Anderson,* *Science,* **2019**, *365*, 1299-1301. An sp-hybridized molecular carbon allotrope, cyclo[18]carbon. *Corresponding authors. **Highlighted in**: Science (15 Aug. 2019), DOI:10.1126/science.aaz1461:"Carbon atoms marry to form first-ever ring"; Nature 2019, 572, 426: "Chemists make first-ever ring of pure carbon"; C&EN (21 Aug. 2019): "Chemists use atomic manipulation to nudge cyclo[18]carbon into being"; Chemistry World (15 Aug. 2019): "New form of pure carbon made by manipulating atoms"; Physics World (15 Aug. 2019): "Hotly debated carbon ring allotrope reveals its structure"
5. N. Pavliček, **P. Gawel***, D. R. Kohn, Z. Majzik, Y. Xiong, G. Meyer, H. L. Anderson*, L. Gross*, Polyyne formation via skeletal rearrangement induced by atomic manipulation. *Nat. Chem.* **2018** *10,* 853–858*.* *Corresponding authors. **Highlighted in**: *Chem. World* **2018**, *8*, 32; *Chem. Unserer Zeit* **2018**, *52*, 211–212
6. D. R. Kohn, **P. Gawel**, Y. Xiong, K. Christensen, H. L. Anderson, *J. Org. Chem.* **2018**, *83*, 2077–2086. Synthesis of Polyynes Using Dicobalt Masking Groups.
7. S. Haberland, A. D. Finke, N. Kerisit, C. Katan, Y. Trolez, **P. Gawel**, I. Leito, M. Lõkov, R. Järviste, K. Kaupmees, N. Trapp, L. Ruhlmann, C. Boudon, D. Himmel, F. Diederich, *Eur. J. Org. Chem.* **2018**, 739–749. Enhancement of Push–Pull Properties of Pentafulvene and Pentafulvalene Derivatives by Protonation at Carbon.
8. N. Kerisit, **P. Gawel**, B. Levandowski, Y.-F. Yang, V. García-López, N. Trapp, L. Ruhlmann, C. Boudon, K. N. Houk, F. Diederich, *Chem. Eur. J.* **2018**, *24,* 159–168. A Four-Step Synthesis of Substituted 5,11-Dicyano-6,12-diaryltetracenes with Enhanced Stability and High Fluorescence Emission (Highlighted as a *Hot Paper*).
9. E. A. Margulies, N. Kerisit, **P. Gawel**, C. M. Mauck, L. Ma, C. E. Miller, R. M. Young, N. Trapp, Y.-L. Wu, F. Diederich, M. R. Wasielewski, *J. Phys. Chem. C* **2017**, *121*, 21262–21271. Substituent Effects on Singlet Exciton Fission in Polycrystalline Thin Films of Cyano-Substituted Diaryltetracenes.
10. A. Khadria, Y. de Coene, **P. Gawel**, C. Roche, K. Clays, H. L. Anderson, *Org. Biomol. Chem.* **2017**, *15*, 947–956. Push-pull pyropheophorbides for nonlinear optical imaging.
11. **P. Gawel**, E. A. Halabi, D. Schweinfurth, N. Trapp, L. Ruhlmann, C. Boudon, F. Diederich, *Eur. J. Org. Chem. **2016**,* 2919–2924. Synthesis of Dicyano-Substituted Benzo[c]fluorenes from Tetraaryl[3]cumulenes.
12. C. Dengiz, C. Prange, **P. Gawel**, N. Trapp, L. Ruhlmann, C. Boudon, F. Diederich, *Tetrahedron,* **2016**, *72*, 1213–1224. Push–pull chromophores by reaction of 2,3,5,6-tetrahalo-1,4-benzoquinones with 4-(N,N-dialkylanilino)acetylenes.
13. E. A. Margulies, Y.-L.Wu, **P. Gawel**, S. A. Miller, L. E. Shoer, R. D. Schaller, F. Diederich, M. R. Wasielewski, *Angew. Chem.* **2015**, *127*, 8803–8807; *Angew. Chem. Int. Ed.* **2015**, *54*, 8679–8683. Sub-Picosecond Singlet Exciton Fission in Cyano-Substituted Diaryltetracenes.
14. **P. Gawel**, Y.-L. Wu, A. D. Finke, N. Trapp, M. Zalibera, C. Boudon, J.-P. Gisselbrecht, W. B. Schweizer, G. Gescheidt, F. Diederich, *Chem. Eur. J*. **2015**, *21*, 6215–6225. Push-Pull Buta-1,2,3-trienes: Exceptionally Low Rotational Barriers of Cumulenic C=C Bonds and Proacetylenic Reactivity.
15. **P. Gawel**, C. Dengiz, A. D. Finke, N. Trapp, C. Boudon, J.-P. Gisselbrecht, F. Diederich, *Angew. Chem.* **2014**, *126*, 4430–4434; *Angew. Chem. Int. Ed.* **2014**, *53*, 4341–4345. Synthesis of Cyano-Substituted Diaryltetracenes from Tetraaryl[3]cumulenes. (Highlighted in *Synfacts* **2014**; 10(6) 587).
16. H. Dodziuk, V. Vetokhina, H. Hopf, R. Luboradzki, **P. Gawel**, J. Waluk, *J. Chem. Phys.* **2012**, *136*, 074201. Electronic states of cyclophanes with small bridges.
17. T. Bauer, S. Smolinski, **P. Gawel**, J. Jurczak, *Tetrahedron Lett.* **2011**, *52*, 4882–4884. Enantioselective addition of phenylacetylene to aldehydes catalyzed by a D-glucosamine-derived sulfonamide-titanium complex.

Wykłady

1. *Exploring an sp-Hybridized Carbon.* Institute of Organic Chemistry PAS, Warsaw, Poland, 08.01.2021.
2. *An sp-hybridized molecular carbon allotrope, cyclo[18]carbon.* University of Łódź, Łódź, Poland, 20.12.2019.
3. *Controlling Reactions of Single Molecules to Make New Carbon Allotropes*. Science: Polish Perspectives, Oxford, 16-17. 11. 2018.
4. *Polyyne formation via skeletal rearrangement induced by atomic manipulation*. University of Wroclaw, 04 January 2018.
5. *Generation of Scientists 2.0: How to Build Polish Science on Young and Mobile Researchers.* National Science Congress, Cracow, 19-20. 9. 2017. I was invited by the Minister of Science and Higher Education of Poland to present my view on science in Poland. It was a part of my consulting program to recent reforms in polish Science.

Konferencje

1. L. Scriven, A. Sterling, **P. Gawel**, N. Pavliček, D. R. Kohn, Y. Xiong, L. Gross, H. L. Anderson, *Synthesis of polyyne molecular wires by atom manipulation on surface.* The Third International Symposium on the Synthesis and Application of Curved Organic π-Molecules & Materials. Oxford, UK, 5-7.09.2018. (Awarded with Poster Prize).
2. **P. Gawel**, N. Pavliček, D. R. Kohn, Y. Xiong, L. Gross, H. L. Anderson, *Synthesis of polyyne molecular wires by atom manipulation on surface.* Development of New Materials, Fundamental Processes, Device Physics and Emerging Applications of Organic Electronics (Gordon Research Seminar). Lucca, Italy, 21-22.07.2018. (Selected for Discussion Leader)
3. **P. Gawel**, N. Pavliček, D. R. Kohn, Y. Xiong, L. Gross, H. L. Anderson, *Synthesis of polyyne molecular wires by atom manipulation on surface.* Electronic Processes in Organic Materials: From Spin Physics to Bioelectronics and Novel Approaches to Doping in Organic Materials (Gordon Research Conference). Lucca, Italy, 22-27.07.2018. (Poster)
4. **P. Gawel**, N. Pavliček, D. R. Kohn, Y. Xiong, L. Gross, H. L. Anderson, *Atomic Manipulation and Observation of a Rearrangement on Single Molecules on a Surface*. 17th International Symposium on Novel Aromatic Compounds, 23-28.08.2016. (Poster)
   P. Gawel, L. D. Movsisyan, M. Franz, F. Hampel, A. L. Thompson, R. R. Tykwinski, H. L. Anderson, *Polyyne Rotaxanes: Stabilization by Encapsulation.* 8th International Conference on Molecular Electronics ElecMol, Paris, France, 22-26.08.2016. (Poster)
5. **P. Gawel**, F. Diederich, *Functional Cumulene-Based Molecular Materials*. Swiss Chemical Society Fall Meeting. Lausanne, Switzerland, 04.09.2015. (Poster)
6. **P. Gawel**, Y.-L. Wu, A. D. Finke, N. Trapp, C. Boudon, J.-P. Gisselbrecht, F. Diederich, *Proacetylenic Character of Cumulenes*, 6th International Symposium on Novel Aromatic Compounds (ISNA-16). Madrid, Spain, 5–10.07.2015. (Awarded with Poster Prize).
7. **P. Gawel**, C. Dengiz, A. D. Finke, N. Trapp, C. Boudon, J.-P. Gisselbrecht, F. Diederich, *Synthesis of Cyano-Substituted Diaryltetracenes from Tetraaryl[3]cumulenes.* Swiss Chemical Society Fall Meeting. Zurich, Switzerland, 11.09.2014. (Poster)
8. **P. Gawel**, C. Dengiz, A. D. Finke, N. Trapp, C. Boudon, J.-P. Gisselbrecht, F. Diederich, *Synthesis of Cyano-Substituted Diaryltetracenes from Tetraaryl[3]cumulenes.* 5th EuCheMS Chemistry Congres. Istanbul, Turkey, 31.08–04.09.2014. (Poster)
9. **P. Gawel**, Y.-L. Wu, A. D. Finke, N. Trapp, M. Zalibera, C. Boudon, J.-P. Gisselbrecht, W. B. Schweizer, G. Gescheidt, F. Diederich, *Push-Pull Buta-1,2,3-trienes: Exceptionally Low Rotational Barriers of Cumulenic C=C Bonds and Their Proacetylenic Reactivity.* 6th Symposium of the Scholarship Fund of the Swiss Chemical Industry. Zurich, Switzerland, 17.12.2013. (Poster)
10. **P. Gawel**, Y.-L. Wu, A. D. Finke, N. Trapp, M. Zalibera, C. Boudon, J.-P. Gisselbrecht, W. B. Schweizer, G. Gescheidt, F. Diederich, *Push–Pull Buta-1,2,3-trienes: Exceptionally Low Rotational Barriers of Cumulenic C=C Bonds and Their Proacetylenic Reactivity.* Swiss Chemical Society Fall Meeting. Lausanne, Switzerland, 06.09.2013. (Poster)