

**PERSONAL DETAILS**

Date and place of birth:

May 17th 1983, Łódź, Poland

Nationality:

Polish

ORCID:

0000-0002-1595-9818

Affiliation and official address:

University of Warsaw  
Centre of New Technologies  
Banacha 2C  
02-097 Warsaw, Poland  
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**EDUCATION AND PROFESSIONAL EXPERIENCE**

**2016 – present**

**Assistant professor**

Centre of New Technologies, University of Warsaw

**Jun 2015 – Aug 2015**

**Researcher**

Department of Organic Chemistry, Arrhenius Laboratory, Stockholm University

**2013 – 2015**

**Postdoctoral fellow (asymmetric organocatalysis)**

Division of Chemistry and Chemical Engineering, California Institute of Technology (with Prof. Gregory C. Fu)

**2011 – 2013**

**Postdoctoral fellow (computational chemistry)**

Department of Organic Chemistry, Arrhenius Laboratory, Stockholm University (with Prof. Fahmi Himo)

**2006 – 2011**

**Graduate student (Ph.D.)**

Department of Organic Chemistry, Arrhenius Laboratory, Stockholm University (with Prof. Jacek Stawiński)

Thesis: "Synthesis of C(sp<sup>2</sup>)-P bonds by palladium-catalyzed reactions. Mechanistic investigation and synthetic studies"

**Jan 2006 – Sep 2006**

**Marie Curie fellow in the Early Stage Research Training** (under EU 6th Framework Program)

Nucleic Acid Center, University of Southern Denmark, Odense (with Prof. Jesper Wengel)

**2002 – 2005**

**Undergraduate student (M.Sc., with honors)**

Centre for Interfaculty, Individual Studies in Mathematical and Natural Sciences, University of Warsaw (with Dr. Jacek Jemielity/ Dr. Janusz Stępiński)

Thesis: "Synthesis of mRNA 5' cap analogs resistant to enzymatic degradation"

## AWARDS AND SCHOLARSHIPS

- 2019 The representative of Poland for the EuChemS Div. of Org. Chem. Young Investigator Workshop, Austria
- 2018 M. Mąkosza Foundation Scientific Award
- 2018 The representative of Poland for the 1st ChemPubSoc Europe Early Career Researcher Meeting, Germany
- 2017 Minister of Science and Higher Education Fellowship for Outstanding Young Scientists
- 2012 Swedish Research Council International Postdoc Fellowship
- 2010 Swedish Chemical Society travel grant
- 2010 C. F. Liljevalch Jr. travel scholarship
- 2009 AstraZeneca Nils Löfgren Memorial Award
- 2009 4th ICIQ Summer School participation grant
- 2008 IS3NA-SNAC travel award
- 2008 J.-A. Ekströms Foundation donation grant
- 2007 K. & A. Wallenbergs Foundation travel scholarship
- 2005 Marie Curie fellowship for Early Stage Research Training (under 6th EU FP)
- 2004 Minister of Education of Poland Awards for outstanding achievements during undergraduate studies
- 2003 Minister of Education of Poland Awards for outstanding achievements during undergraduate studies
- 2002 Minister of Education of Poland Award for outstanding achievements during high school education
- 2002 4th place and a gold medal on the 34th International Chemistry Olympiad, Groningen, the Netherlands

## RESEARCH FUNDING

- 2017 – 2023 National Science Centre – Poland (*Narodowe Centrum Nauki*) grant Sonata Bis @ University of Warsaw  
1 996 800 PLN
- 2015 – 2019 National Science Centre – Poland (*Narodowe Centrum Nauki*) grant Sonata @ University of Warsaw  
975 360 PLN
- 2013 – 2015 Swedish Research Council (*Vetenskapsrådet*) International Postdoc Grant @ California Institute of Technology and Stockholm University  
2 362 500 SEK

## SERVICE TO PROFESSIONAL JOURNALS

Reviewer for: *ACS Catalysis, Chemistry - An Asian Journal, ChemCatChem, ChemsitrySelect, European Journal of Organic Chemistry, Journal of the American Chemical Society, Organometallics, Synthetic Communications, The Journal of Organic Chemistry*

## CITATION METRICS

Sum of times cited: **1243**

Sum of times cited without self-citations: **1200**

H-index: **21**

## PUBLICATION LIST

### I. Articles and book chapters

1. Kalek, M.; Jemielity, J.; Stepinski, J.; Stolarski, R.; Darzynkiewicz, E.  
"A direct method for the synthesis of nucleoside 5'-methylebis(phosphonate)s from nucleosides"  
*Tetrahedron Lett.* **2005**, *46*, 2417-2421.
2. Stepinski, J.; Zuberek, J.; Jemielity, J.; Kalek, M.; Stolarski, R.; Darzynkiewicz, E.  
"Novel dinucleoside 5',5'-triphosphate cap analogues and affinity for murine translation factor eIF4E"  
*Nucleosides Nucleotides Nucleic Acids* **2005**, *24*, 629-633.
3. Kalek, M.; Jemielity, J.; Grudzien, E.; Zuberek, J.; Bojarska, E.; Cohen, L. S.; Stepinski, J.; Stolarski, R.; Davies, R. E.; Rhoads, R. E.; Darzynkiewicz, E.  
"Synthesis and biochemical properties of novel mRNA 5' cap analogs resistant to enzymatic hydrolysis"  
*Nucleosides Nucleotides Nucleic Acids* **2005**, *24*, 615-621.
4. Grudzien, E.; Kalek, M.; Jemielity, J.; Darzynkiewicz, E.; Rhoads, R. E.  
"Differential inhibition of mRNA degradation pathways by novel cap analogs"  
*J. Biol. Chem.* **2006**, *281*, 1857-1867.
5. Kalek, M.; Jemielity, J.; Darzynkiewicz, Z. M.; Bojarska, E.; Stepinski, J.; Stolarski, R.; Davies, R. E.; Darzynkiewicz, E.  
"Enzymatically stable 5' mRNA cap analogs: synthesis and binding studies with human DcpS decapping enzyme"  
*Bioorg. Med. Chem.* **2006**, *14*, 3223-3330.
6. Kalek, M.; Madsen, A. S.; Wengel, J.  
"Effective modulation of DNA-duplex stability by reversible transition metal complex formation in the minor groove"  
*J. Am. Chem. Soc.* **2007**, *129*, 9392-9400.
7. Kalek, M.; Stawinski, J.

- "Pd(0)-catalyzed phosphorus-carbon bond formation. Mechanistic and synthetic studies on the role of the palladium sources and anionic additives."  
*Organometallics* **2007**, *26*, 5840-5847.
8. Darzynkiewicz, Z. M.; Bojarska, E.; Kowalska, J.; Lewdorowicz, M; Jemielity, J.; Kalek, M.; Stepinski, J.; Davis R. E.; Darzynkiewicz E.  
"Interaction of human decapping scavenger with 5' mRNA cap analogues: structural requirements for catalytic activity"  
*J. Phys.: Condens. Matter* **2007**, *19*, 285217.
9. Wierzchowski, J.; Pietrzak, M.; Stepinski, J.; Jemielity, J.; Kalek, M.; Bojarska, E.; Jankowska-Anyszka, M; Davis, R. E.; Darzynkiewicz, E.  
"Kinetics of *C. Elegans* DcpS cap hydrolysis studied by fluorescence spectroscopy"  
*Nucleosides Nucleotides Nucleic Acids* **2007**, *26*, 1211-1215.
10. Bartoszewicz, A.; Kalek, M.; Nilsson, J.; Hiresova, R.; Stawinski, J.  
"A new reagent system for efficient silylation of alcohols – silyl chloride-N-methylimidazole-iodine"  
*Synlett* **2008**, 37-40.
11. Kalek, M.; Benedikson, P.; Vester, B.; Wengel, J.  
"Identification of efficient and sequence specific bimolecular artificial ribonucleases by a combinatorial approach"  
*Chem. Commun.* **2008**, 762-764.
12. Deshmukh, M. V.; Jones, B. N.; Quang-Dang, D.; Flinders, J. C.; Floor, S. N.; Kim, C.; Jemielity, J.; Kalek, M.; Darzynkiewicz, E.; Gross J. D.  
"mRNA decapping is promoted by an RNA binding channel in Dcp2"  
*Mol. Cell* **2008**, *29*, 324-336.
13. Bartoszewicz, A.; Kalek, M; Stawinski, J.  
"The case for the intermediacy of monomeric metaphosphates during oxidation of *H*-phosphonothioate, *H*-phosphonodithioate, and *H*-phosphonoselenoate monoesters. Mechanistic and synthetic studies."  
*J. Org. Chem.* **2008**, *73*, 5029-5038.
14. Kalek, M.; Stawinski, J.  
"Palladium-catalyzed C-P bond formation: mechanistic studies on the ligand substitution and the reductive elimination. An intramolecular catalysis by the acetate group in Pd<sup>II</sup> complexes."  
*Organometallics* **2008**, *27*, 5876-5888.
15. Bartoszewicz, A.; Kalek, M.; Stawinski, J.  
"Iodine-promoted silylation of alcohols with silyl chlorides. Synthetic and mechanistic studies."  
*Tetrahedron* **2008**, *64*, 8843-8850.
16. Kalek, M.; Ziadi, A.; Stawinski, J.  
"Microwave-assisted palladium-catalyzed cross-coupling of aryl and vinyl halides with *H*-phosphonate diesters"  
*Org. Lett.* **2008**, *10*, 4637-4640.

17. Wallin, R.; Kalek, M.; Bartoszewicz, A.; Thelin, M.; Stawinski, J.  
"On the sulfurization of H-phosphonate diesters and phosphite triesters using elemental sulfur"  
*Phosphorus, Sulfur Silicon Relat. Elem.* **2009**, *184*, 908-916.
18. Kalek, M.; Stawinski, J.  
"Efficient synthesis of mono- and diarylphosphinic acids: a microwave-assisted palladium-catalyzed cross-coupling of aryl halides with phosphinate"  
*Tetrahedron* **2009**, *65*, 10406-10412.
19. Kalek, M.; Jezowska, M.; Stawinski, J.  
"Preparation of arylphosphonates by Pd(0)-catalyzed cross-coupling in the presence of acetate additives. Synthetic and mechanistic studies."  
*Adv. Synth. Catal.* **2009**, *351*, 3207-3216.
20. Lavén, G.; Kalek, M.; Jezowska, M.; Stawinski, J.  
"Preparation of benzylphosphonates via a palladium(0)-catalyzed cross-coupling of H-phosphonate diesters with benzyl halides. Synthetic and mechanistic studies."  
*New J. Chem.* **2010**, *34*, 967-975.
21. Kalek, M.; Johansson, T.; Jezowska, M.; Stawinski, J.  
"Palladium-catalyzed propargylic substitution with phosphorus nucleophiles: efficient, stereoselective synthesis of allenylphosphonates and related compounds"  
*Org. Lett.* **2010**, *12*, 4702-4704.
22. Kalek, M.; Stawinski, J.  
"Novel, stereoselective and stereospecific synthesis of allenylphosphonates and related compounds via palladium-catalyzed propargylic substitution"  
*Adv. Synth. Catal.* **2011**, *353*, 1741-1755.
23. Söderberg, L.; Lavén, G.; Kalek, M.; Stawinski, J.  
"<sup>31</sup>P NMR and computational studies on stereochemistry of conversion of phosphoramidate diesters into the corresponding phosphotriesters"  
*Nucleosides Nucleotides Nucleic Acids* **2011**, *30*, 552-564.
24. Jiménez-Halla, J. O. C.; Kalek, M.; Stawinski, J.; Himo, F.  
"Computational study of the mechanism and selectivity of palladium-catalyzed S<sub>N</sub>2' propargylic substitution with phosphorus nucleophiles"  
*Chem. Eur. J.* **2012**, *18*, 12424-12436.
25. Kalek, M.; Himo, F.  
"Combining Meyer-Schuster rearrangement with aldol and Mannich reactions – DFT study of the intermediate interception strategy"  
*J. Am. Chem. Soc.* **2012**, *134*, 19159-19169.
26. Huang, G.; Kalek, M.; Himo, F.  
"Mechanism and selectivity of rhodium-catalyzed 1:2 coupling of aldehydes and allenes"  
*J. Am. Chem. Soc.* **2013**, *135*, 7647-7659.

27. Biswas, S.; Dahlstrand, C.; Watile, R. A.; Kalek, M.; Himo, F.; Samec, J. S. M.  
"Atom-efficient gold(I) chloride-catalyzed synthesis of alpha-sulfonylated carbonyl compounds from propargylic alcohols and aryl thiols: substrate scope and combined experimental and computational mechanistic investigation"  
*Chem. Eur. J.* **2013**, *19*, 17939–17950.
28. Kalek, M.; Stawinski, J.  
"Stereoselective methods for carbon-phosphorus (C–P) bond formation"  
in: "Stereoselective synthesis of drugs and natural products", Andrushko, V. and Andrushko, N. (Eds.), John Wiley & Sons, 2013 (ISBN 978-1-118-03217-6), pp. 1443-1472.
29. Huang, G.; Kalek, M.; Liao, R.-Z.; Himo, F.  
"Mechanism, reactivity, and selectivity of iridium-catalyzed C(sp<sup>3</sup>)-H borylation of chlorosilanes"  
*Chem. Sci.* **2015**, *6*, 1735-1746.
30. Lee S. Y.; Fujiwara, Y.; Nishiguchi, A.; Kalek, M.; Fu, G. C.  
"Phosphine-catalyzed enantioselective intramolecular [3+2] cycloadditions to generate fused ring systems"  
*J. Am. Chem. Soc.* **2015**, *137*, 4587-4591.
31. Kalek, M.; Fu, G. C.  
"Phosphine-catalyzed doubly stereoconvergent  $\gamma$ -additions of racemic heterocycles to racemic allenates: the catalytic enantioselective synthesis of protected  $\alpha,\alpha$ -disubstituted  $\alpha$ -amino acid derivatives"  
*J. Am. Chem. Soc.* **2015**, *137*, 9438-9442.
32. Santoro, S.; Kalek, M.; Huang, G.; Himo, F.  
"Elucidation of mechanisms and selectivities of metal-catalyzed reactions using quantum chemical methodology"  
*Acc. Chem. Res.* **2016**, *49*, 1006-1018.
33. Kalek, M.; Fu, G. C.  
"Caution in the use of nonlinear effects as a mechanistic tool for catalytic enantioconvergent reactions: intrinsic negative nonlinear effects in the absence of higher order species"  
*J. Am. Chem. Soc.* **2017**, *139*, 4225-4229.
34. Kalek, M.; Himo, F.  
"Mechanism and selectivity of cooperatively-catalyzed Meyer-Schuster rearrangement/Tsuji-Trost allylic substitution. Evaluation of synergistic catalysis by means of combined DFT and kinetics simulations."  
*J. Am. Chem. Soc.* **2017**, *139*, 10250-10266.
35. Qiu Y.; Mendoza, A.; Posevins D.; Himo, F.; Kalek, M.; Bäckvall, J.-E.  
"Mechanistic insight into enantioselective palladium-catalyzed oxidative carbocyclization-borylation of enallenes"  
*Chem. Eur. J.* **2018**, *24*, 2433-2439.

36. Rajkiewicz, A. A.; Kalek, M.  
 “*N*-Heterocyclic carbene-catalyzed olefination of aldehydes with vinylodonium salts to generate  $\alpha,\beta$ -unsaturated ketones”  
*Org. Lett.* **2018**, *20*, 1906-1909.
37. Ghosh, M. K.; Rajkiewicz, A. A.; Kalek, M.  
 “Organocatalytic group-transfer reactions with hypervalent iodine reagents”  
*Synthesis* **2019**, *51*, 359-370.
38. Ghosh, M. K.; Rzymkowski, J.; Kalek, M.  
 “Transition metal-free aryl-aryl cross-coupling: C–H arylation of 2-naphthols with diaryliodonium salts”  
*Chem. Eur. J.* **2019**, *25*, 9619-9623.
39. Rajkiewicz, A. A.; Wojciechowska, N.; Kalek, M.  
 “*N*-Heterocyclic carbene-catalyzed synthesis of ynones via C–H alkynylation of aldehydes with alkynyliodonium salts – evidence for alkynyl transfer via direct substitution at acetylenic carbon”  
*ACS Catal.* **2020**, *10*, 831-841.  
 (preprint: *ChemRxiv*, 10.26434/chemrxiv.9946925.v1)
40. Perlinska, A. P.; Kalek, M.; Christian, T.; Hou, Y.-M.; Sulkowska, J. I.  
 “Mg<sup>2+</sup>-dependent methyl transfer by a knotted protein: A molecular dynamics and quantum mechanics study”  
*ACS Catal.* **2020**, *10*, 8058-8068 (cover picture).
41. Kraszewski, K.; Tomczyk, I.; Drabinska, A.; Bienkowski, K.; Solarska, R.; Kalek, M.  
 “Mechanism of iodine(III)-promoted oxidative dearomatizing hydroxylation of phenols: evidence for radical-chain pathway”  
*Chem. Eur. J.* **2020**, *26*, 11584-11592 (Hot Paper).  
 (preprint: *ChemRxiv*, 10.26434/chemrxiv.12102771.v1)
42. Sarkar, S.; Ghosh, M. K.; Kalek, M.  
 “Synthesis of Pummerer’s ketone and its analogs by iodosobenzene-promoted oxidative phenolic coupling”  
*Tetrahedron Lett.* **2020**, *accepted for publication*

## II. Conference proceedings

1. Kalek, M.; Jemielity, J.; Grudzien, E.; Zuberek, J.; Darzynkiewicz, Z.M.; Bojarska, E.; Stepinski, J.; Stolarski, R.; Davis, R.E.; Rhoads, R.E.; Darzynkiewicz, E.  
 “Synthesis and biochemical properties of the novel, enzymatically stable mRNA cap analogues with versatile potential applications” in:  
*Collection Symposium Series* (M. Hocek, Ed.), Vol. 7, p. 355-359, Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic, Prague 2005.
2. Kalek, M.; Stawinski, J.

"Synthetic studies on the P-C bond formation *via* a Pd-catalyzed cross-coupling reaction. Application to the synthesis of P-arylated nucleic acids" in:  
*Collection Symposium Series* (M. Hocek, Ed.), Vol. 10, p. 214-218, Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic, Prague 2008.

3. Bartoszewicz, A.; Kalek, M.; Stawinski, J.  
"Synthesis of nucleoside phosphorothio-, phosphorodithio- and phosphoroselenoate diesters *via* oxidative esterification of the corresponding H-phosphonate analogues" in:  
*Collection Symposium Series* (M. Hocek, Ed.), Vol. 10, p. 219-223, Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic, Prague 2008.
4. Kalek, M.; Bartoszewicz, A.; Stawinski, J.  
"Synthesis of nucleoside phosphorothio-, phosphorodithio- and phosphoroselenoate diesters *via* oxidative esterification of the corresponding H-phosphonate analogues",  
*Nucleic Acids Symposium Series* **2008**, 52, 285-286.
5. Kalek, M.; Jezowska, M.; Stawinski, J.  
"Palladium-catalyzed propargylic substitution with phosphorus nucleophiles",  
*Am. Chem. Soc. Meeting, Abstracts of Papers, ORGN-487 (2010)*.

## CONFERENCE PRESENTATIONS

### By MK:

1. Kalek, M.; Kowalska, J.; Jemielity, J.; Darzynkiewicz, E.  
"Synthesis of nucleotides modified in the phosphate chain" (poster; in Polish)  
*46th Meeting of the Polish Chemical Society*, Lublin, Poland, September 2003.
2. Kalek, M.; Grudzien, E.; Jemielity, J.; Zuberek, J.; Bojarska, E.; Cohen, L. S.; Stepinski, J.; Stolarski, R.; Davies, R. E.; Rhoads, R. E.; Darzynkiewicz, E.  
"Synthesis of cap analogues selectively modified in triphosphate chain: tools in studies of decapping process" (poster)  
*29th FEBS Meeting*, Warsaw, Poland, June 2004.
3. Kalek, M.; Jemielity, J.; Stepinski, J.; Stolarski, R.; Darzynkiewicz, E.  
"Simple and efficient method for synthesis of nucleosides 5'-methylenebis(phosphonate)s" (poster)  
*16th International Roundtable on Nucleosides, Nucleotides and Nucleic Acids*, Minneapolis, USA, September 2004.
4. Kalek, M.; Jemielity, J.; Zuberek, J.; Grudzien, E.; Bojarska, E.; Cohen, L. S.; Stepinski, J.; Stolarski, R.; Davies, R. E.; Rhoads, R. E.; Darzynkiewicz, E.  
"Synthesis and biochemical properties of novel mRNA 5' cap analogs resistant to enzymatic hydrolysis" (poster)  
*16th International Roundtable on Nucleosides, Nucleotides and Nucleic Acids*, Minneapolis, USA, September 2004.



5. Kalek, M.; Jemielity, J.; Grudzien, E.; Zuberek, J.; Darzynkiewicz, Z.M.; Bojarska, E.; Stepinski, J.; Stolarski, R.; Davis, R. E.; Rhoads, R. E.; Darzynkiewicz, E.  
 "Synthesis and biochemical properties of the novel, enzymatically stable mRNA cap analogues with versatile potential applications" (oral communication)  
*13th Symposium on Chemistry of Nucleic Acids Components*, Špindlerův Mlýn, Czech Republic, September 2005.
  
6. Kalek, M.; Wengel, J.  
 "Preliminary studies on sequence specific artificial ribonucleases based on LNA" (poster)  
*27th International Round Table on Nucleosides, Nucleotides and Nucleic Acids*, Bern, Switzerland, September 2006.
  
7. Kalek, M.; Stawinski, J.  
 "Efficient method for the P-C bond formation *via* palladium-catalyzed coupling and its application to the synthesis of P-arylated nucleic acids" (poster)  
*3rd Nucleic Acid Chemical Biology (NACB) Symposium*, Odense, Denmark, June 2007.
  
8. Kalek, M.; Stawinski, J.  
 "Synthetic studies on the P-C bond formation *via* Pd-catalyzed cross-coupling reaction. Application to the synthesis of P-arylated nucleic acids" (oral communication)  
*14th Symposium on Chemistry of Nucleic Acids Components*, Český Krumlov, Czech Republic, June 2008.
  
9. Kalek, M.; Bartoszewicz, A.; Stawinski, J.  
 "Synthesis of nucleoside phosphorothio-, phosphorodithio- and phosphoroselenoate diesters via oxidative esterification of the corresponding H-phosphonate analogues" (poster)  
*Joint Symposium of 18th International Round Table on Nucleosides, Nucleotides and Nucleic Acids and 35th International Symposium on Nucleic Acid Chemistry*, Kyoto, Japan, September 2008.
  
10. Kalek, M.; Ziadi, A.; Stawinski, J.  
 "Microwave-assisted palladium-catalyzed cross-coupling of aryl and vinyl halides with H-phosphonate diesters" (poster)  
*4th CRC International Symposium on "Cross-Coupling and Organometallics"*, Stockholm, Sweden, November 2008.
  
11. Kalek, M.; Jezowska, M. ; Stawinski, J.  
 "Intramolecular catalysis of the ligand exchange by acetate during C-P forming cross-coupling. Mechanistic studies and synthetic application." (poster)  
*18th EuCheMS Conference on Organometallic Chemistry*, Göteborg, Sweden, June 2009.
  
12. Kalek, M.; Stawinski, J.  
 "Microwave-assisted, palladium-catalyzed synthesis of arylphosphinates" (poster)  
*14th International Symposium on Relations between Homogeneous and Heterogeneous Catalysis*, Stockholm, Sweden, September 2009.
  
13. Kalek, M.; Jezowska, M.; Stawinski, J.

“Synthesis of allenylphosphonates by palladium-catalyzed propargylic substitution” (oral communication)  
*18th International Conference on Phosphorus Chemistry*, Wroclaw, Poland, July 2010.

14. Kalek, M.; Jezowska, M.; Stawinski, J. (oral communication)  
“Palladium-catalyzed propargylic substitution with phosphorus nucleophiles”  
*240th ACS National Meeting & Exposition*, Boston, USA, August 2010.
15. Kalek, M.; Himo, F.;  
“Numerical simulation of chemical kinetics – a tool for the analysis of complex kinetic networks. A case study of contemporaneous dual catalysis.” (oral communication)  
*23rd Organikerdagarna*, Göteborg, Sweden, June 2012.
16. Kalek, M.; Himo, F.;  
“Simulation of chemical kinetic networks – a tool for the analysis of complex catalytic cycles. Case study of cooperative catalysis.” (poster)  
*International Conference "Catalysis in Organic Synthesis"*, Moscow, Russia, September 2012.
17. Kalek, M.  
“Analysis of selectivity in synergistic catalysis by means of combined DFT calculations and kinetics simulations” (invited oral communication)  
*4th Meeting on Challenges in Computational Homogeneous Catalysis*, Stockholm, Sweden, June 2017.
18. Kalek, M.  
“Intrinsic nonlinear effect in catalytic enantioconvergent reactions” (invited oral communication; in Polish)  
*60th Meeting of the Polish Chemical Society*, Wroclaw, Poland, September 2017.
19. Kalek, M.; Qiu, Y.; Mendoza, A.; Posevins, D.; Himo, F.; Bäckvall, J.-E.  
“Computational studies on mechanism and selectivity of asymmetric palladium-catalyzed oxidative carbocyclization–borylation of enallenes” (poster)  
*11th Nationwide Polish Symposium of Organic Chemistry (OSCO)*, Warsaw, Poland, April 2018.
20. Kalek, M.; Rajkiewicz, A. A.; Ghosh, M. K.; Wojciechowska, N.; Rzymkowski, J.  
“Metal-free C–H functionalizations using iodonium salts as group transfer reagents” (invited lecture)  
*EuChemS Div. of Org. Chem. Young Investigator Workshop*, Vienna, Austria, July 2019.

**By others:**

1. Bartoszewicz, A.; Kalek, M.; Stawinski, J.  
“Synthesis of nucleoside phosphorothio-, phosphorodithio- and phosphoroselenoate diesters *via* oxidative esterification of the corresponding H-phosphonate analogues”  
*XIV Symposium on Chemistry of Nucleic Acids Components*, Český Krumlov, Czech Republic, June 2008 (oral communication).
2. Rajkiewicz, A. A.; Kalek, M.

- “NHC-Catalyzed synthesis of vinyl ketones via coupling of aldehydes with vinylodonium salts” (poster; in Polish)  
*60th Meeting of the Polish Chemical Society, Wroclaw, Poland, September 2017.*
3. Rajkiewicz, A. A.; Kalek, M.  
“NHC-Catalyzed coupling of aldehydes with vinylodonium salts leading to  $\alpha,\beta$ -unsaturated ketones” (oral communication; in Polish)  
*11th Nationwide Polish Symposium of Organic Chemistry, Warsaw, Poland, April 2018.*
  4. Kraszewski, K.; Kalek, M.  
“Enantioselective oxidative dearomatization of phenols catalyzed by chiral iodoarenes” (poster; in Polish)  
*ChemSession 2018, Warsaw, Poland, June 2018.*
  5. Rzymkowski, J.; Kalek, M.  
“Design and synthesis of chiral iodoarenes – catalysts for enantioselective oxidative dearomatization of phenols with addition of nucleophiles” (poster; in Polish)  
*ChemSession 2018, Warsaw, Poland, June 2018.*
  6. Rajkiewicz, A. A.; Kalek, M.  
“N-Heterocyclic Carbene-Catalyzed Olefination of Aldehydes with Vinylodonium Salts To Generate  $\alpha,\beta$ -Unsaturated Ketones” (oral communication)  
*6th International Conference on Hypervalent Iodine Chemistry, Cardiff, Wales, July 2018.*
  7. Rajkiewicz, A. A.; Wojciechowska, N.; Kalek, M.  
“Iodonium salts as group transfer reagents – N-heterocyclic carbene-catalyzed synthesis of vinyl and propargyl ketones” (poster; in Polish)  
*ChemSession 2019, Warsaw, Poland, June 2019.*
  8. Rajkiewicz, A. A.; Wojciechowska, N.; Kalek, M.  
“Iodonium salts as group transfer reagents – N-heterocyclic carbene-catalyzed synthesis of vinyl and propargyl ketones” (poster)  
*21st European Symposium on Organic Chemistry, Vienna, Austria, July 2019.*
  9. Kraszewski, K.; Kalek, M.  
“Mechanistic studies on oxidative dearomatization of phenols promoted by hypervalent iodine species” (poster)  
*21st European Symposium on Organic Chemistry, Vienna, Austria, July 2019.*
  10. Ghosh, M. K.; Kalek, M.  
“Metal-free regioselective C-H activation – A facile route for arylation of naphthols using diaryliodonium triflate” (poster)  
*21st European Symposium on Organic Chemistry, Vienna, Austria, July 2019.*
  10. Rajkiewicz, A. A.; Wojciechowska, N.; Kalek, M.  
“Iodonium salts as group transfer reagents – N-heterocyclic carbene-catalyzed synthesis of vinyl and propargyl ketones” (oral presentation)  
*ACS Fall 2020 Virtual Meeting & Expo, August 2020.*

## OTHER TALKS

1. "Conjugates of DNA with transition metal complexes and their application in duplex stability modulation and catalysis of RNA cleavage"  
University of Warsaw, Poland 02/2007
2. "Phosphine-catalyzed enantioselective stereoconvergent reactions. Development of new processes, mechanistic investigations, and studies of non-linear effects."  
Stockholm University, Sweden 03/2017
3. "Mechanistic and synthetic investigations on catalytic reactions"  
Institute of Organic Chemistry, Polish Academy of Sciences, Poland 02/2018
4. "Analysis of selectivity in synergistic catalysis by means of combined DFT calculations and kinetics simulations"  
Warsaw University of Technology, Poland 05/2018
5. "Reactions employing hypervalent iodine compounds – new synthetic methods and mechanistic investigations"  
M. Mąkosza Foundation Scientific Award Lecture  
Institute of Organic Chemistry, Polish Academy of Sciences, Poland 11/2018
6. "Metal-free C–H functionalizations using iodonium salts as group transfer reagents"  
Institute of Bioorganic Chemistry, Polish Academy of Sciences, Poland 10/2019