

## Publications

### SUMMARY

**Total publications:** 50, *incl.*

1 invited book chapter, 2 reviews (peer-reviewed);  
1 *Science*, 1 *Adv.Funct.Mater.*, 5 *JACS*, 1 *Mater.Horiz.*, 7 *Angew.Chem.*,  
1 *Chem.Sci.*, 1 *J.Mater.Chem.C*, 1 *Nanoscale*, 1 *Org.Lett.*, 2 *Chem.Comm.*,  
7 *Chem.Eur.J.*, 8 *Inorg.Chem.*, etc.

**Publications during independent career** (excluding PhD and postdoc): 43

**Publications as corresponding author:** 22

**Citations:** total: 1648

average citations per publication: 35.06 (Web of Science)

**h-Index:** 26 (Web of Science)

28 (Google Scholar)

Publication List is also available via:

**ResearcherID:** [O-7723-2016](#)

**Scopus Author ID:** [12240699500](#)

**ORCID iD:** [0000-0002-2034-421X](#)

**Google Scholar:** [profile](#)

### FIVE SELECTED PUBLICATIONS

- Unusual Dinitrogen Binding and Electron Storage in Dinuclear Iron Complexes.  
D. U. Sorsche, M. Miehl, K. Searles, G. Gouget, E. M. Zolnhofer, S. Fortier, C.-H. Chen, M. R. Gau, P. J. Carroll, C. B. Murray, K. G. Caulton, [M. M. Khusniyarov](#),\* K. Meyer,\* D. J. Mindiola,\*  
*J. Am. Chem. Soc.* **2020**, 142, 8147–8159.
- Room Temperature Control of Spin States in a Thin Film of a Photochromic Iron(II) Complex.  
L. Poggini,\* M. Milek, G. Londi, A. Naim, G. Poneti, L. Squillantini, A. Magnani, F. Totti, P. Rosa, [M. M. Khusniyarov](#),\* M. Mannini,\*  
*Materials Horizons* **2018**, 5, 506–513. *impact factor 14.4*
- Reversible Photoswitching of a Spin-Crossover Molecular Complex in the Solid State at Room Temperature.  
B. Rösner, M. Milek, A. Witt, B. Gobaut, P. Torelli, R. H. Fink,\* [M. M. Khusniyarov](#),\*  
*Angew. Chem. Int. Ed.* **2015**, 54, 12976–12980. *70+ citations*
- Bidirectional Photoswitching of Magnetic Properties at Room Temperature: Ligand-Driven Light-Induced Valence Tautomerism.  
A. Witt, F. W. Heinemann, [M. M. Khusniyarov](#),\*  
*Chem. Sci.* **2015**, 6, 4599–4609.  
*Highlighted:* in „Trendberichte 2016“, *Nachrichten aus der Chemie* **2016**, 64, 232–245.  
as “Main discoveries in the coordination chemistry-based approach to single-molecule magnetism”, in *Coord. Chem. Rev.* **2017**, 339, 17–103.
- Synthesis, Structure, and Reactivity of an Iron(V) Nitride.  
J. J. Scepaniak, C. S. Vogel, [M. M. Khusniyarov](#), F. W. Heinemann, K. Meyer,\* J. M. Smith,\*  
*Science* **2011**, 331, 1049–1052. *190+ citations*

## INVITED BOOK CHAPTER

50. Light-Induced Spin-Crossover.

M. M. Khusniyarov,\*

*Elsevier Reference Module in Chemistry, Molecular Sciences and Chemical Engineering* (Ed.: J. Reedijk). Waltham, MA: Elsevier, **2015**.

## REVIEW ARTICLES (PEER-REVIEWED)

49. Azole-Based Diarylethenes as the Next Step towards Advanced Photochromic Materials.

A. G. Lvov,\* M. M. Khusniyarov, V. Z. Shirinian,

*J. Photochem. Photobiol. C* **2018**, 36, 1–23.

48. How to Switch Spin-Crossover Metal Complexes at Constant Room Temperature.

M. M. Khusniyarov,\*

*Chem. Eur. J.* **2016**, 22, 15178–15191. *Invited Concept Article*



## PEER-REVIEWED RESEARCH ARTICLES

47. A One-Pot Universal Approach to Fabricate Lubricant-Infused Slippery Surfaces on Solid Substrates.

*Adv. Funct. Mater.* (impact factor 16.8) **2021**, accepted.

46. One-way photoisomerization of ligands for permanent switching of metal complexes.

A. G. Lvov, M. Mörtel, F. Heinemann, M. M. Khusniyarov,\*

*J. Mater. Chem. C* (impact factor 7.1) **2021**, DOI: 10.1039/d1tc00761k.

45. A valence tautomeric cobalt–dioxolene complex with an anchoring group for prospective chemical grafting to metal oxides.

M. Mörtel, M. Seller, F. W. Heinemann, M. M. Khusniyarov,\*

*Dalton Trans.* **2020**, 49, 17532–17536.

44. Unusual Dinitrogen Binding and Electron Storage in Dinuclear Iron Complexes.

D. U. Sorsche, M. Miehl, K. Searles, G. Gouget, E. M. Zolnhofer, S. Fortier, C.-H. Chen, M. R. Gau, P. J. Carroll, C. B. Murray, K. G. Caulton, M. M. Khusniyarov,\* K. Meyer,\* D. J. Mindiola,\*

*J. Am. Chem. Soc.* **2020**, 142, 8147–8159.

43. Reversible Shifting of a Chemical Equilibrium by Light: The Case of Keto-Enol Tautomerism of a  $\beta$ -Ketoester.

A. G. Lvov,\* A. V. Yadykov, K. A. Lyssenko, F. W. Heinemann, V. Z. Shirinian, M. M. Khusniyarov,

*Org. Lett.* **2020**, 22, 604–609.

42. Phenanthroline-Based Molecular Switches for Prospective Chemical Grafting: A Synthetic Strategy and Its Application to Spin-Crossover Complexes.

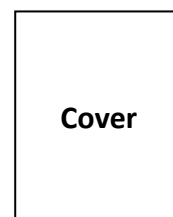
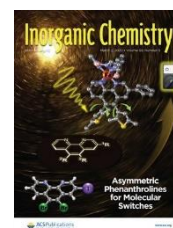
M. Mörtel, T. Lindner, A. Scheurer, F. W. Heinemann, M. M. Khusniyarov,\*

*Inorg. Chem.* **2020**, 59, 2659–2666.

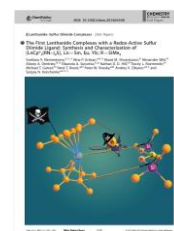
41. Photochromic diarylethene ligands featuring 2-(imidazol-2-yl)pyridine coordination site and their iron(II) complexes.

A. G. Lvov,\* M. Mörtel, A. V. Yadykov, F. W. Heinemann, V. Z. Shirinian, M. M. Khusniyarov,\*

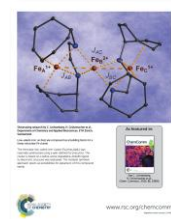
*Beilstein J. Org. Chem.* **2019**, 15, 2428–2437.



40. Surface effects on a photochromic spin-crossover iron(II) molecular switch adsorbed on highly oriented pyrolytic graphite.  
L. Poggini,\* G. Londi, M. Milek, A. Naim, V. Lanzilotto, B. Cortigiani, F. Bondino, E. Magnano, E. Otero, P. Sainctavit, M.-A. Arrio, A. Juhin, M. Marchivie, M. M. Khusniyarov, F. Totti,\* P. Rosa, M. Mannini,  
*Nanoscale (impact factor 7.0)* **2019**, *11*, 20006–20014.
39. Crossover from Antiferromagnetic to Ferromagnetic Exchange Coupling in a New Family of Bis-( $\mu$ -phenoxido)dicopper(II) Complexes: A Comprehensive Magneto-Structural Correlation by Experimental and Theoretical Study.  
D. Mondal, M. C. Majee, K. Bhattacharya, J. Long, J. Larionova, M. M. Khusniyarov, M. Chaudhury,\*  
*ACS Omega* **2019**, *4*, 10558–10570.
38. Kinetic Control of Interpenetration in Fe-Biphenyl-4,4'-Dicarboxylate Metal-Organic Frameworks by Coordination and Oxidation Modulation.  
D. J. Bara, C. Wilson, M. Mörtel, M. M. Khusniyarov, S. Ling, B. Slater, S. Sproules, R. S. Forgan,\*  
*J. Am. Chem. Soc.* **2019**, *141*, 8346–8357.
37. Europium and ytterbium complexes with o-iminoquinonato ligands: synthesis, structure, and magnetic behavior.  
S. V. Klementyeva,\* A. N. Lukoyanov, M. Y. Afonin, M. Mörtel, A. I. Smolentsev, P. A. Abramov, A. A. Starikova, M. M. Khusniyarov,\* S. N. Konchenko,  
*Dalton Trans.* **2019**, *48*, 3338–3348.
36. Room Temperature Control of Spin States in a Thin Film of a Photochromic Iron(II) Complex.  
L. Poggini,\* M. Milek, G. Londi, A. Naim, G. Poneti, L. Squillantini, A. Magnani, F. Totti, P. Rosa, M. M. Khusniyarov,\* M. Mannini,\*  
*Materials Horizons* **2018**, *5*, 506–513. *impact factor: 14.4*
35. Dinuclear Iron(III) and Cobalt(III) Complexes Featuring a Biradical Bridge: Their Molecular Structures and Magnetic, Spectroscopic, and Redox Properties.  
D. Mondal, M. C. Majee, S. Kundu, M. Mörtel, G. Abbas, A. Endo, M. M. Khusniyarov,\* M. Chaudhury,\*  
*Inorg. Chem.* **2018**, *57*, 1004–1016.
34. Synthesis, Characterization and Properties of Iron(II) Spin-Crossover Molecular Photoswitches Functioning at Room Temperature.  
M. Mörtel, A. Witt, F. W. Heinemann, S. Bochmann, J. Bachmann, M. M. Khusniyarov,\*  
*Inorg. Chem.* **2017**, *56*, 13174–13186.
33. The First Lanthanide Complexes with a Redox-Active Sulphur Diimide Ligand: Synthesis and Characterization of  $[\text{LnCp}^*_2(\text{RN}=\text{)}_2\text{S}]$ , Ln = Sm, Eu, Yb; R = SiMe<sub>3</sub>.  
S. V. Klementyeva, N. P. Gritsan,\* M. M. Khusniyarov, A. Witt, A. A. Dmitriev, E. A. Suturina, N. D. D. Hill, T. L. Roemmele, M. T. Gamer, R. T. Boéré,\* P. W. Roesky,\* A. V. Zibarev,\* S. N. Konchenko,\*  
*Chem. Eur. J.* **2017**, *23*, 1278–1290. *Hot Paper*



32. Cooperative reduction by  $\text{Ln}^{2+}$  and  $\text{Cp}^{*-}$  ions: synthesis and properties of Sm, Eu, and Yb complexes with 3,6-di-*tert*-butyl-*o*-benzoquinone.  
N. A. Pushkarevsky,\* M. A. Ogienko, A. I. Smolentsev, I. N. Novozhilov, A. Witt, M. M. Khusniyarov, V. K. Cherkasov, S. N. Konchenko,  
*Dalton Trans.* **2016**, 45, 1269–1278.
31. Reversible Photoswitching of a Spin-Crossover Molecular Complex in the Solid State at Room Temperature.  
B. Rösner, M. Milek, A. Witt, B. Gobaut, P. Torelli, R. H. Fink,\* M. M. Khusniyarov,\*  
*Angew. Chem. Int. Ed.* **2015**, 54, 12976–12980.
30. Low-Valent Iron: an Fe(I) ate Compound as a Building Block for a Linear Trinuclear Fe Cluster.  
C. Lichtenberg,\* L. Viciu, M. Vogt, R. E. Rodriguze-Lugo, M. Adelhardt, J. Sutter, M. M. Khusniyarov, K. Meyer, B. de Bruin, E. Bill, H. Grützmacher,\*  
*Chem. Commun.* **2015**, 51, 13890–13893.
29. Bidirectional Photoswitching of Magnetic Properties at Room Temperature: Ligand-Driven Light-Induced Valence Tautomerism.  
A. Witt, F. W. Heinemann, M. M. Khusniyarov,\*  
*Chem. Sci.* **2015**, 6, 4599–4609.  
**Highlighted:** in „Trendberichte 2016“, *Nachrichten aus der Chemie* **2016**, 64, 232–245.  
as “Main discoveries in the coordination chemistry-based approach to single-molecule magnetism”, in *Coord. Chem. Rev.* **2017**, 339, 17–103.
28. Square-Planar Ruthenium(II) Complexes: Control of Spin State by Pincer Ligand Functionalization.  
B. Askevold, M. M. Khusniyarov, W. Kroener, K. Gieb, P. Müller, E. Herdtweck, F. W. Heinemann, M. Diefenbach, M. C. Holthausen, V. Vieru, L. F. Chibotaru, S. Schneider,\*  
*Chem. Eur. J.* **2015**, 21, 579–589. **Hot Paper**
27. A *cis*-Divacant Octahedral and Mononuclear Iron(IV) Imide.  
K. Searles, S. Fortier,\* M. M. Khusniyarov, P. J. Carroll, J. Sutter, K. Meyer,\* D. J. Mindiola,\* K. G. Caulton,\*  
*Angew. Chem. Int. Ed.* **2014**, 53, 14139–14143.
26. An Intermediate Cobalt(IV) Nitrido Complex and its N-Migratory Insertion Product.  
E. M. Zolnhofer, M. Käß, M. M. Khusniyarov, F. W. Heinemann, L. Maron, M. van Gastel, E. Bill, K. Meyer,\*  
*J. Am. Chem. Soc.* **2014**, 136, 15072–15078.
25. Modulation of Magnetic Properties at Room Temperature: Coordination-Induced Valence Tautomerism in a Cobalt Dioxolene Complex.  
A. Witt, F. W. Heinemann, S. Sproules, M. M. Khusniyarov,\*  
*Chem. Eur. J.* **2014**, 20, 11149–11162.
24. Tuning the Electronic Properties in Ruthenium-Quinone Complexes through Metal Coordination and Substitution at the Bridge.  
H. S. Das, D. Schweinfurth, J. Fiedler, M. M. Khusniyarov, S. M. Mobin, B. Sarkar,\*  
*Chem. Eur. J.* **2014**, 20, 4334–4346.



23. The Electronic Ground State of  $[\text{Fe}(\text{CO})_3(\text{NO})]^-$ : A Spectroscopic and Theoretical Study.  
J. E. M. N. Klein, B. Miehlich, M. S. Holzwarth, M. Bauer, M. Milek, M. M. Khusniyarov, G. Knizia, H.-J. Werner, B. Plietker,\*  
*Angew. Chem. Int. Ed.* **2014**, 53, 1790–1794.
22. Spin Crossover Meets Diarylethenes: Efficient Photoswitching of Magnetic Properties in Solution at Room Temperature.  
M. Milek, F. W. Heinemann, M. M. Khusniyarov,\*  
*Inorg. Chem.* **2013**, 52, 11585–11592.
21. Tuning Spin-Spin Coupling in Quinonoid-Bridged Dicopper(II) Complexes through Rational Bridge Variation.  
D. Schweinfurth, M. M. Khusniyarov,\* D. Bubrin, S. Hohloch, C.-Y. Su, B. Sarkar,\*  
*Inorg. Chem.* **2013**, 52, 10332–10339.
20. Tetraanionic  $\text{N}_2\text{O}_2$ -Coordinating Ligands as Potential Building Blocks for Supramolecular Magnetic Networks.  
M. Milek, A. Witt, C. Streb, F. W. Heinemann, M. M. Khusniyarov,\*  
*Dalton Trans.* **2013**, 42, 5237–5241.
19. Dinuclear Seven-Coordinate Mn(II) Complexes. Effect of Manganese(II)-Hydroxo Species on Water Exchange and Superoxide Dismutase Activity.  
D. Lieb, F. C. Friedel, M. Yawer, A. Zahl, M. M. Khusniyarov, F. W. Heinemann, I. Ivanović - Burmazović,\*  
*Inorg. Chem.* **2013**, 52, 222–236.
18. Manganese Nitride Complexes in Oxidation States III, IV, and V: Synthesis and Electronic Structure.  
H. Kropp, A. E. King, M. M. Khusniyarov, F. W. Heinemann, K. M. Lancaster, S. DeBeer, E. Bill, K. Meyer,\*  
*J. Am. Chem. Soc.* **2012**, 134, 15538–15544.
17. Capped-Tetrahedrally Coordinated Fe(II) and Co(II) Complexes Using a “Click”-Derived Tripodal Ligand: Geometric and Electronic Structures.  
D. Schweinfurth, S. Demeshko, M. M. Khusniyarov, S. Dechert, V. Gurram, M. R. Buchmeiser, F. Meyer, B. Sarkar,\*  
*Inorg. Chem.* **2012**, 51, 7592–7597.
16. Unraveling the Electronic Structures of Low-valent Naphthalene and Anthracene Iron Complexes: X-ray, Spectroscopic and Density Functional Studies.  
E.-M. Schnöckelborg, M. M. Khusniyarov, B. de Bruin, F. Hartl, T. Langer, M. Eul, S. Schulz, R. Pöttgen, R. Wolf,\*  
*Inorg. Chem.* **2012**, 51, 6719–6730.
15. Metal substitution in a Lindqvist polyoxometalate leads to improved photocatalytic performance.  
J. Tucher, Y. Wu, L. C. Nye, I. Ivanovic-Burmazovic, M. M. Khusniyarov, C. Streb,\*  
*Dalton Trans.* **2012**, 41, 9938–9943.



14. Square-Planar Iridium(II) and Iridium(III) Amido Complexes Stabilized by a PNP Pincer Ligand. J. Meiners, M. G. Scheibel, M.-H. Lemée-Cailleau, S. A. Mason, M. B. Boeddinghaus, T. F. Fässler, E. Herdtweck, M. M. Khusniyarov,\* S. Schneider,\* *Angew. Chem. Int. Ed.* **2011**, *50*, 8184–8187.
13. Tuning the light absorption of a molecular vanadium oxide system for enhanced photooxidation performance. J. Forster, B. Rösner, M. M. Khusniyarov, C. Streb,\* *Chem. Commun.* **2011**, *47*, 3114–3116.
12. Synthesis, Structure, and Reactivity of an Iron(V) Nitride. J. J. Scepaniak, C. S. Vogel, M. M. Khusniyarov, F. W. Heinemann, K. Meyer,\* J. M. Smith,\* *Science* **2011**, *331*, 1049–1052.
11. Hidden Noninnocence: Theoretical and Experimental Evidence for Redox Activity of a  $\beta$ -Diketiminato(1-) Ligand. M. M. Khusniyarov,\* E. Bill, T. Weyhermüller, E. Bothe, K. Wieghardt,\* *Angew. Chem. Int. Ed.* **2011**, *50*, 1652–1655. *Hot Paper*
10. Homoleptic Diphosphacyclobutadiene Complexes  $[M(\eta^4\text{-P}_2\text{C}_2\text{R}_2)_2]^{x-}$  (M = Fe, Co; x = 0, 1). R. Wolf,\* A. W. Ehlers, M. M. Khusniyarov, F. Hartl, B. de Bruin, G. J. Long, F. Grandjean, F. M. Schappacher, R. Pöttgen, J. C. Slootweg, M. Lutz, A. L. Spek, K. Lammertsma,\* *Chem. Eur. J.* **2010**, *16*, 14322–14334.
9. Unexpected Reactivity Resulting From Modifications of the Ligand Periphery: Synthesis, Structure, and Spectroscopic Properties of Iron Complexes of New Tripodal N-heterocyclic Carbene (NHC) Ligands. C. S. Vogel, F. W. Heinemann, M. M. Khusniyarov, K. Meyer,\* *Inorg. Chim. Acta* **2010**, *364*, 226–237.
8. A Square-Planar Ruthenium(II) Complex with a Low-Spin Configuration. B. Askevold, M. M. Khusniyarov, E. Herdtweck, K. Meyer, S. Schneider,\* *Angew. Chem. Int. Ed.* **2010**, *49*, 7566–7569.

## before 2010

7. Tuning the oxidation level, the spin state, and the degree of electron delocalization in homo- and heteroleptic bis( $\alpha$ -diimine)iron complexes. M. M. Khusniyarov,\* T. Weyhermüller, E. Bill, K. Wieghardt,\* *J. Am. Chem. Soc.* **2009**, *131*, 1208–1221.
6. Characterization of three members of the electron-transfer series  $[\text{Fe}(\text{pda})_2]^n$  ( $n = 2-, 1-, 0$ ) by spectroscopy and density functional theoretical calculations [pda = redox non-innocent derivatives of *N,N*-bis(pentafluorophenyl)-*o*-phenylenediamide(2-, 1<sup>-</sup>, 0)]. M. M. Khusniyarov,\* E. Bill, T. Weyhermüller, E. Bothe, K. Harms, J. Sundermeyer,\* K. Wieghardt,\* *Chem. Eur. J.* **2008**, *14*, 7608–7622.
5. Reversible electron transfer coupled to spin crossover in an iron coordination salt in the solid state. M. M. Khusniyarov,\* T. Weyhermüller, E. Bill, K. Wieghardt,\* *Angew. Chem. Int. Ed.* **2008**, *47*, 1228–1231.

4. A series of metal complexes with the non-innocent *N,N*-bis(pentafluorophenyl)-*o*-phenylenediamido ligand: twisted geometry for tuning the electronic structure. M. M. Khusniyarov, K. Harms, J. Sundermeyer,\* B. Sarkar, W. Kaim, J. van Slageren, C. Duboc, J. Fiedler,  
*Dalton Trans.* **2008**, 1355–1365.
3. Molecular and electronic structures of homoleptic nickel and cobalt complexes with non-innocent bulky diimine ligands derived from fluorinated 1,4-diaza-1,3-butadiene (DAD) and bis(arylimino)acenaphthene (BIAN).  
M. M. Khusniyarov, K. Harms, O. Burghaus, J. Sundermeyer,\*  
*Eur. J. Inorg. Chem.* **2006**, 2985–2996.
2. New highly fluorinated phenazine derivatives: Correlation between crystal structure and NMR spectroscopy.  
M. M. Khusniyarov, K. Harms, J. Sundermeyer,\*  
*J. Fluor. Chem.* **2006**, 127, 200–204.
1. Study of the ethylene polymerization over homogeneous and supported catalysts based on 2,6-bis(imino)pyridyl complexes of Fe(II) and Co(II).  
N. V. Semikolenova,\* V. A. Zakharov, E. P. Talsi, D. E. Babushkin, A. P. Sobolev, L. G. Echevskaya, M. M. Khusniyarov,  
*J. Mol. Cat. A: Chem.* **2002**, 182–183, 283–294.

## STATISTICS

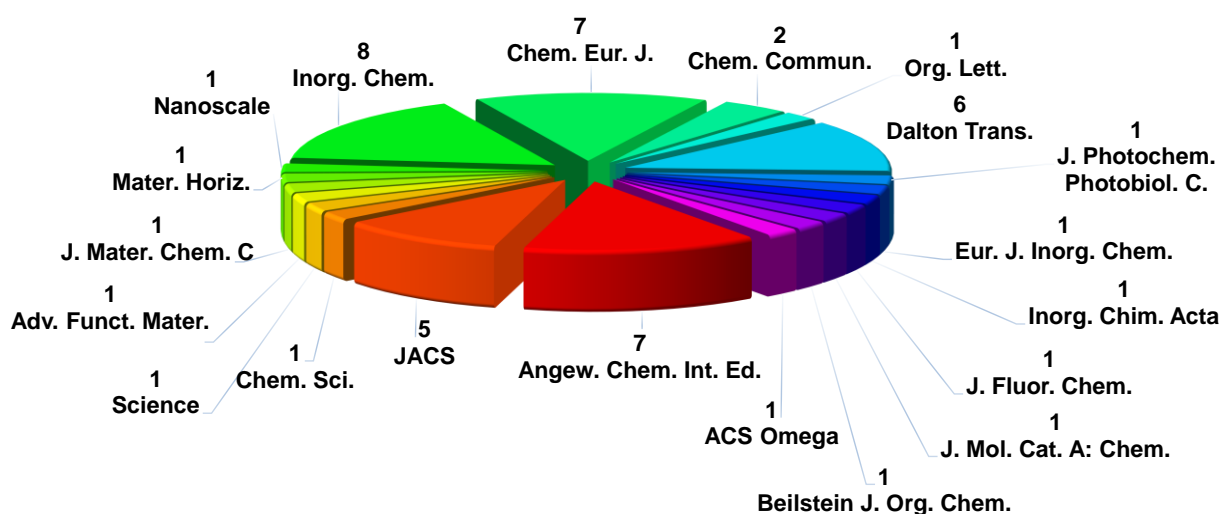


Fig. 1. Distribution of publications.

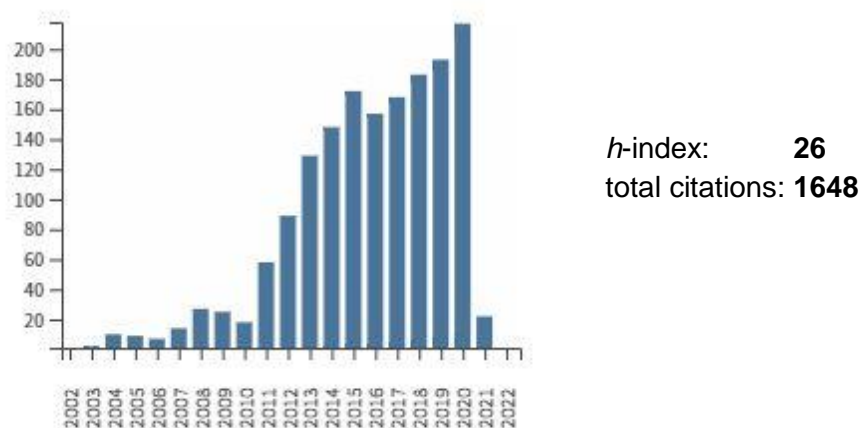


Fig. 2. Citations (Web of Science, 16.03.2020).

#### OTHER CONTRIBUTION

- [Die Elektronenstruktur "einfacher" Eisenkomplexe: Ein sehr komplexes Problem.](#)  
M. M. Khusniyarov, T. Weyhermüller, E. Bill,\* K. Wieghardt, *Jahrbuch* **2009**, Max-Planck-Gesellschaft.

#### PUBLICITY AND NEWS

5. [Functional molecular materials: Can the surface selectively drive properties?](#)  
*Elettra Highlights 2019–2020*, Elettra Sincrotrone Trieste, **2020**.  
Published online:  
<https://www.elettra.trieste.it/images/Documents/SCIENCE/Elettra%20HL%202020.pdf>
4. [Molecules becoming bits \(trans. from German: "Moleküle werden zu Bits"\)](#).  
*Alexander (aktuelles aus Friedrich-Alexander-Universität)*, Nr. 100, November **2015**.  
Available online: [https://www.fau.de/files/2014/07/fau\\_magazin\\_alexander\\_100.pdf](https://www.fau.de/files/2014/07/fau_magazin_alexander_100.pdf)
3. [Reversible Photoswitching of a Spin-Crossover Molecular Complex in the Solid State at Room Temperature](#).  
*Elettra Sincrotrone Trieste. News*, October 1<sup>st</sup>, **2015**.  
Published online: <https://www.elettra.trieste.it/science/top-stories/reversible-photoswitching-of-a-spin-crossover-molecular-complex-in-the-solid-state-at-room-temperature.html>
2. [Controlling magnetism with light \(German: "Magnetisch durch Licht"\)](#).  
*Friedrich-Alexander-Universität Erlangen-Nürnberg, News*, September 23<sup>rd</sup> (German: September 18<sup>th</sup>), **2015**.  
Published online:  
English: <https://www.fau.eu/2015/09/23/news/research/controlling-magnetism-with-light/>  
German: <https://www.fau.de/2015/09/news/wissenschaft/magnetisch-durch-licht/>
1. [Heavy Metal of World Science \(trans. from Russian: "Тяжёлый рок мировой науки"\)](#).  
Natalja Bykova, *S&T RF – Science and Technologies of Russian Federation*, April 4<sup>th</sup>, **2011**.  
Published online: <https://strf.livejournal.com/57857.html>