

Prof. Dr. Nora Kulak

born 18 May 1979 in Berlin
married, three children

Professor for Inorganic Chemistry
Institut of Chemistry, University of Potsdam

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Curriculum vitae

- since** **Professor for Inorganic Chemistry (W3)**
07/2023 – deputy head of the institute since 12/2023 –
University of Potsdam
Institute of Chemistry
- 2020–2023** **Professor Chair for Inorganic Chemistry (W2)**
– parental part-time 2020 (75%) –
– head of the institute 10/2022–06/2023 –
Otto von Guericke University of Magdeburg
Institute of Chemistry
- 2011–2020** **Assistant professor for Bioinorganic Chemistry (W1, without tenure track)**
– parental part-time 2014/15 (25/50%) and 2018/19 (25/75%) –
Freie Universität Berlin
Institute of Chemistry and Biochemistry
- 2008–2010** **Postdoc**
Massachusetts Institute of Technology (MIT), Cambridge/MA, USA
Department of Chemistry, Supervisor Prof. Dr. Stephen Lippard
- 2006–2008** **Postdoc**
Federal Institute for Materials Research and Testing (BAM), Berlin, Germany
Surface and Thin Film Analysis, Supervisor Dr. Wolfgang Unger
- 2003–2006** **PhD thesis**
Ruprecht-Karls-Universität Heidelberg, Germany
Institute of Inorganic Chemistry, Supervisor Prof. Dr. Roland Krämer
- 1998–2003** **Studies of Chemistry**
Ruprecht-Karls-Universität Heidelberg, Germany

Fellowships and awards (selection)

- 2016** Dr. Otto Röhm Gedächtnisstiftung award
2008 Postdoc fellowship (DAAD – German academic exchange service, 2 years)
2004 Predoc fellowship (state of Baden-Württemberg, 2 years)
2003 Dr. Sophie Bernthsen award for diploma

Research interests

→ Metal complexes with biological functions

- Metal-based artificial nucleases, proteases and enzyme inhibitors
- Metal complexes with (light-induced) cytotoxic and antimicrobial properties
- Fluorinated ligand systems for bioactive metal complexes
- Supramolecular aggregation and immobilization of bioactive metal complexes

→ Metal complexes in diagnostics

- Sensors for metal ions and reactive oxygen species (ROS)
- Alternative MRI contrast agents based on Fe(III)

→ Metal complexes in catalysis

- EAM catalysts for oxidation reactions (EAM = earth-abundant metal)

Supervision of students (past and present)

- 10 PhD students + 3 external
- 28 students for their master's thesis + 11 external
- 32 students for their bachelor's thesis + 2 external

Memberships

- Gesellschaft Deutscher Chemiker (GDCh)
- American Chemical Society (ACS)
- Deutscher Hochschulverband (DHV)
- Society of Biological Inorganic Chemistry (SBIC)

Committees

- Study commission Chemistry (BSc/MSc)
- Before @OVGU Magdeburg: Equal opportunities representative FVST (deputy), Erasmus+-representative FVST, Lead Research Cluster within EU Alliance „EU GREEN Universities“

Language skills

- German (mother tongue)
- English, Turkish (very good)
- French, Spanish, Greek (basic)
- Latin (Latinum)

Publications

h-index 23

Citations 2547

ORCID

Web of Science ResearcherID

Google Scholar

0000-0002-8347-4046

B-8607-2009

Nora Kulak

10 most important publications

(from publication outlets with scientific quality assurance)

1.

Impact of N-heteroaromatic N-termini in Cu(II) ATCUN metallopeptides on their biorelevant redox activity

J. Barrera, H. H. Haeri, J. Heinrich, M. Stein, D. Hinderberger, **N. Kulak***

Dalton Trans. **2023**, *52*, 3279–3286 (with cover picture).

2.

Incorporation of β -alanine in Cu(II) ATCUN peptide complexes increases ROS levels, DNA cleavage and antiproliferative activity

J. Heinrich, K. Bossak-Ahmad, M. Riisom, H. H. Haeri, T. R. Steel, V. Hergl, A. Langhans, C. Schattschneider, J. Barrera, S. M. F. Jamieson, M. Stein, D. Hinderberger, C. G. Hartinger, W. Bal, **N. Kulak***

Chem. Eur. J. **2021**, *27*, 18093–18102.

– „Top-downloaded article“ –

3.

Forty Years After the Discovery of its Nucleolytic Activity: $[\text{Cu}(\text{phen})_2]^{2+}$ Shows Unattended DNA Cleavage Activity Upon Fluorination

C. Lüdtkke, S. Sobottka, J. Heinrich, P. Liebing, S. Wedepohl, B. Sarkar, **N. Kulak***

Chem. Eur. J. **2021**, *27*, 3273–3277.

4.

A Fluorescence Assay for the Detection of Hydrogen Peroxide and Hydroxyl Radicals generated by Metallonucleases

S. Lechnitz, J. Heinrich, **N. Kulak***

Chem. Commun. **2018**, *54*, 13411–13414.

5.

Synthesis and Evaluation of Artificial DNA Scissors: An Interdisciplinary Undergraduate Experiment

J. Hormann, S. Streller, **N. Kulak***

J. Chem. Educ. **2018**, *95*, 1848–1855.

– selected as publication of the month November 2018 at the Institute for Chemistry and Biochemistry at FU Berlin –

6.

Multiply intercalator-substituted Cu(II) cyclen complexes as DNA condensers and DNA/RNA synthesis inhibitors

J. Hormann, J. Malina, O. Lemke, M. Hülsey, S. Wedepohl, J. Potthoff, C. Schmidt, I. Ott, B. Keller, V. Brabec, N. Kulak*

Inorg. Chem. **2018**, *57*, 5004–5012.

– selected as publication of the month May 2018 at the Institute for Chemistry and Biochemistry at FU Berlin –

7.

Efficient Artificial Nucleases for Mediating DNA Cleavage Based on Tuning the Steric Effect in the Pyridyl Derivatives of Tripod Tetraamine-cobalt(II) Complexes

S. Doniz Kettenmann, F. R. Louka, E. Marine, R. C. Fischer, F. A. Mautner, N. Kulak*, S. S. Massoud*

Eur. J. Inorg. Chem. **2018**, 2322–2338 (Very Important Paper).

– selected for special issue "20th Anniversary – Celebrating the Past, Present and Future" –

8.

Significantly enhanced proteolytic activity of cyclen complexes by monoalkylation

C. Perera-Bobusch, J. Hormann, C. Weise, S. Wedepohl, J. Dervedde, N. Kulak*

Dalton Trans. **2016**, *45*, 10500–10504.

9.

Fluorophore ATCUN complexes: combining agent and probe for oxidative DNA cleavage

C. Wende, N. Kulak*

Chem. Commun. **2015**, *51*, 12395–12398.

10.

Straightforward approach to efficient oxidative DNA cleaving agents based on Cu(II) complexes of heterosubstituted cyclens

J. Hormann, C. Perera, N. Deibel, D. Lentz, B. Sarkar, N. Kulak*

Dalton Trans. **2013**, *42*, 4357–4360.