

Prof. Dr. Nora Kulak

born 18 May 1979 in Berlin
married, three children

Professor of Inorganic Chemistry
Institute of Chemistry, University of Potsdam

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Curriculum vitae

- since 07/2023 Professor of Inorganic Chemistry (W3)**
– head of the institute since 10/2024 –
University of Potsdam
Institute of Chemistry
- 2020–2023 Professor of 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 of Bioinorganic Chemistry (W1, without TT)**
– 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
- 32 students for their master's thesis + 11 external
- 34 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)
- Associate Member of the Research Center Dynamic Systems (CDS) OVGU Magdeburg

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 24

Citations 2804

ORCID

Web of Science ResearcherID

Google Scholar

ELSEVIER
Scopus

0000-0002-8347-4046

B-8607-2009

Nora Kulak

36720146800

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: [Cu(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.