

## Personal Information

Name: Irina Alexandra Vlčková Kühne

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### ➤ Education

**2011 - 2014** Dr. rer. nat. (PhD, 1.0 - magna cum laude) in chemistry: "Synthesis and characterization of large 3d and 3d/4f complexes and their magnetic properties". PhD supervisor: Prof. Annie K. Powell Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany.

2005 - 2010 Mathematics/Chemistry study at KIT - Karlsruhe, certificate: Staatsexamen (MSc).

### ➤ Current Position

**2022 - now**: Group Leader (Gas Sensors and Functional Nanomaterials) within the Department of Functional Materials (Division of Condensed Matter Physics) at FZU.

**2020 - 2021**: Postdoctoral Fellow at the Institute of Physics at the Czech Academy of Sciences (FZU). This post is funded by the EU Structural Funds, Operational Program Research, Development and Education (OP VVV), Project ID: CZ.02.2.69/0.0/18\_053/0016627 (€ 37,000) in 2020.

Work: Establishing a new research group in the department focusing on sensor application via deposition of metal complexes in form of thin films, with emphasis on transition metal and lanthanide complexes. CVD and magnetron sputtering of thin metal films and semiconductors. Exploration of sensing applications of new molecular materials towards hazardous gases.

### ➤ Previous Positions

**2018 - 2020**: Postdoctoral Fellow at University College **Dublin** (UCD) with Assoc. Prof. Dominic Zerulla (School of Physics). This post was funded by Enterprise Ireland, a national agency responsible for technological innovation in Ireland, advancing academic outputs.

Work: Development of 10 nm resolution imaging facility via Plasmonically Electronic Addressable Super-Resolution Microscopy, (PEARLabs, part of 4-member winning team which was awarded a €770,000 (in 3 phases within one year: €20,000 + €250,000 + €500,000) Future Innovator Prize in May 2020. My work included building instrument, sample preparation on variety of surfaces, demonstration of 10 nm resolution by collecting images, proposal writing, presenting to external review panel at on-site visit.

**2016 - 2018**: Postdoctoral Fellow at University College **Dublin** (UCD) with Assoc. Prof. Grace Morgan (School of Chemistry). This post was funded by a competitive Government of Ireland independent fellowship (€91,790) awarded to me by Irish Research Council (IRC) in 2015.

Work: Development of Hybrid Magnetic Materials including spin crossover (SCO) and single molecule magnets (SMMs), synthesis, characterization, surface attachment of molecules. Magneto-optical effects: optical switching of magnetization and electric polarization. Piezoelectric interrogation with conducting force microscopy (CFM) and atomic force microscopy (AFM). Magnetic measurements and analysis.

**2015 - 2016**: Postdoctoral Fellow at the Department of Inorganic Chemistry at KIT (**Karlsruhe** Institute of Technology) as a researcher for Prof. Annie K. Powell.

Work: Synthesis and Characterisation of new single molecule magnets using Cu(II) and lanthanides.

**2015**: Postdoctoral Fellow at the University of **Ottawa**, Canada, as a joined researcher for Prof. Muralee Murugesu and Prof. Jaclyn Brusso

Work: Research on complexes using 2-Pyridyl-1,2,4,6-Thiatriazine ligands under anaerobic conditions (using Schlenk technique and glove box) to investigate the magnetic coupling with a paramagnetic metal centre.

### ➤ Fellowship and Awards

2020: Research Mobility Grant to work at the Institute of Physics of the Czech Academy of Sciences (FZU) by the EU Structural Funds, Operational Program Research, Development and Education (OP VVV), Project ID: CZ.02.2.69/0.0/18\_053/0016627 (€37,000)

2020: Future Innovator Prize from Science Foundation Ireland (SFI): Addressable Super-Resolution Microscopy, part of the winning 4-member team (€770,000 (in 3 phases))

2019: Starting Career Grant for the 7th ECMM Conference in Florence (Italy) from MolSpin Cost Action CA15128 (€500).

2019: Seed Funding for Conference Presentation at the 7th ECMM (Florence, Italy) from UCD (€ 1000).

2019: Grants from the EU-Cost action CA15107 - MultiComp, to attend meetings (in Zagreb, Tallinn, Vilnius, -2017 Aveiro, Prague, Trieste) and the "Training School on Nanomaterials synthesis and advanced characterization techniques at nanometer and atomic scale" in Bucharest, Romania. (€3,550)

2017: RSC Research Mobility Award Funding for a research project in collaboration with the High-Field Laboratories in Los Alamos and Tallahassee from the Royal Society of Chemistry (GBP4,376).

2016: IRC postdoctoral fellowship for 2 years (GOIPD/2016/503) from the Irish Research

Council: Interface-Driven Magnetic, Ferroelectric and Photovoltaic Devices (€91,790).

2016: Fellowship from the Karlsruhe House of Young Scientists (KHYS) for a 3-month research stay at the University of Sussex with Dr. George Kostakis (€3,800).

2016: Travel Award to present at the Workshop for Young Investigators on Functional Molecular Materials and Molecular Related Magnetism – Rising Star Pre-ICMM@IMR (Sendai, Japan) (20,000 JPY)

#### ➤ Supervision of Graduate Students

- Supervision of 4th-year honours project students (1 x in **2016-2017** and 2 x in **2017-2018**), Erasmus exchange students (**2017**) and project students from the US (1 x in **2016-2017** and 1 x in **2017-2018**) in the lab during my time in the Department of Chemistry at University College Dublin (UCD), Ireland.
- Mentoring of students during their diploma theses (1x in **2011/2012** and 1x in **2013/2014**), 6-weeks research training projects (Vertiefferpraktikum 3x 6 months between **2011-2014**) and Bachelor (1x in **2016**) and Masters' (1x in **2015/2016**) theses during my PhD/postdoc time in the department of inorganic chemistry at KIT (Karlsruhe Institute of Technology, Germany).

#### ➤ Organization of Scientific Meetings

- 2019: Organization (with one other) of the Coordination and Organometallic Discussion Group of the Royal Society of Chemistry, Dec. 2019, Dublin, Ireland.
- 2018: Organization (with one other) of the CODG 1968 Meeting - 50 years of coordination chemistry (Royal Society of Chemistry Coordination and Organometallic Discussion Group), Dec. 2018, Dublin, Ireland.
- 2013: Organization (with one other) of the Magnetic Anisotropy Workshop, a satellite workshop for young scientists within the 4th European Conference on Molecular Magnetism (ECMM), Oct. 2013
- 2013: Organization committee of the ECMM, Karlsruhe, Germany, Oct. 2013.

#### ➤ Reviewing Activities

2020/21: Scientific reviewer for Inorganic Chemistry (ACS), Dalton Transactions (RSC), New Journal of Chemistry (RSC), Journal of Physics: Condensed Matter (IOP), and Molecules (MDPI).

#### ➤ Membership of Scientific Societies

- 2014: Member of the Royal Society of Chemistry (MRSC).
- 2017: Vice-leader of work group WG1, ITC coordinator and MC-Substitute for Ireland in the EU Cost Action CA15107 MultiComp (Multifunctional Nano-Carbon Composite Materials).
- 2021: Substitute Management Committee member (MC-Substitute) for the Czech Republic in the new EU Cost Action group CA19118 (High-performance Carbon-based composites with Smart properties for Advanced Sensing Applications).

#### ➤ Teaching Activities

- Lecturer of General and Inorganic Chemistry II (GIC II) in English (AB101002) at the University of Chemistry and Technology Prague (UCT) for 1<sup>st</sup> year chemistry students. (**summer semester: 2022 and 2023 (=now)**).
- Lecturer of General and Inorganic Chemistry I (GIC I) in English (AB101001) at the University of Chemistry and Technology Prague (UCT) for 1<sup>st</sup> year chemistry students. (**winter semester 2021/22**).
- Lecturer on large class module of Inorganic Chemistry CHEM00020 at UCD for 260 1<sup>st</sup> year agricultural students. I was responsible for half of this 24-lecture/5-lab module. (**winter semester 2017/18**).
- 3-week substitute for Prof. Annie Powell's Inorganic Chemistry Lecture AOC-1 (basic lecture for students of chemistry, biology, physics) at KIT (Karlsruhe Institute of Technology) (**December 2015**).
- Lecture all first-year chemistry trainees (Azubi-Unterricht) at KIT in addition to their normal school schedule (Karlsruhe Institute of Technology) (**Oct. 2014 - Jan. 2015**).

#### ➤ Bibliography

- **publications:** 25 (since 2014)
- 1<sup>st</sup> author papers: 13
- corresponding author papers: 1
- **citations:** 340 (google scholar)
- **h-index:** 12 (google scholar)
- book chapter: 1
- contributions at conferences (since 2013): 12 talks + 12 posters
- **invited talks** (since 2017): 4

