

## List of publications

Bretislav Friedrich

August 4, 2022

226. M. Mirahmadi, B. Friedrich, B. Schmidt, and J. Perez-Rios:  
*Mapping atomic trapping in an optical superlattice onto the libration of a planar rotor in electric fields*  
Submitted to New Journal of Physics (2022). <https://arxiv.org/abs/2208.02096>
225. B. Friedrich:  
*An electro-optical trap for molecules*  
Submitted to Physical Review A (2022). <https://arxiv.org/abs/2202.05637>
224. W. Yue, Qi Wei, S. Kais, B. Friedrich, and D. Herschbach:  
*Realization of Heisenberg models of spin systems with polar molecules in pendular states*  
Submitted to Physical Chemistry Chemical Physics (2022). <https://arxiv.org/abs/2112.14981>
223. H. Schmidt-Böcking and B. Friedrich:  
*One hundred years ago Alfred Landé unriddled the Anomalous Zeeman Effect and presaged Electron Spin*  
Physica Scripta (2022)
222. M. Bronner, V. Yam, G. Meijer, and B. Friedrich:  
*Editorial: UNESCO issues a strong endorsement of Open Science*  
Natural Sciences (2022). <https://doi.org/10.1002/ntls.10037>
221. M. Karra, M. T. Cretu, B. Friedrich, S. Truppe, G. Meijer, and J. Pérez-Ríos:  
*Dynamics of translational and rotational thermalization of AlF molecules via collisions with cryogenic helium*  
Physical Review A **105**, 022808 (2022).  
<https://journals.aps.org/prapdf/10.1103/PhysRevA.105.022808>
220. B. Friedrich, G. Meijer, H. Schmidt-Böcking, and G. Gruber:  
*One Hundred Years of Alfred Landé's g-Factor*  
Natural Sciences (2021). <https://doi.org/10.1002/ntls.20210068>
219. B. Friedrich:  
*Rudolf Zahradník (1828-2020): "Dělej to, co se sluší a patří,"*  
in Jiří Padevět (ed.): *Za Rudolfem a Milenou Zahradníkovými*  
Academia, Prague (2021).
218. M. Karra, B. Schmidt, and B. Friedrich:  
*Quantum dynamics of a polar rotor acted upon by an electric rectangular pulse of variable duration*  
Molecular Physics e1966111 (2021). Festschrift for Jürgen Troe.  
<https://doi.org/10.1080/00268976.2021.1966111>

217. D. Herschbach, J.P. Toennies, and B. Friedrich:  
*Obituary for Zdenek Herman*  
Physics Today **74**, 59 (2021).
216. B. Friedrich:  
*Obituary for Rudolf Zahradnik*  
Physics Today **74**, 64 (2021).
215. M. Mirahmadi, B. Schmidt, and B. Friedrich:  
*Planar rotor dynamics driven by suddenly switched combined aligning and orienting interactions*  
New Journal of Physics **23**, 063040 (2021).
214. H.G. Huber, H. Schmidt-Böcking, and B. Friedrich:  
*Walther Gerlach (1889-1979): Precision Physicist, Educator and Research Organizer, Historian of Science* pp. 119-161, in Bretislav Friedrich and Horst Schmidt-Böcking (eds.):  
*Molecular Beams in Physics and Chemistry: From Otto Stern's Pioneering Exploits to Present-day Feats*  
Springer, Heidelberg (2021).
213. B. Friedrich and H. Schmidt-Böcking:  
*Otto Stern's Molecular Beam Method and its Impact on Quantum Physics* pp. 37-88, in  
Bretislav Friedrich and Horst Schmidt-Böcking (eds.): *Molecular Beams in Physics and Chemistry: From Otto Stern's Pioneering Exploits to Present-day Feats*  
Springer, Heidelberg (2021).
212. B. Friedrich and H. Schmidt-Böcking:  
*Preface to Molecular Beams in Physics and Chemistry: From Otto Stern's Pioneering Exploits to Present-day Feats* pp. v-vii, Springer, Heidelberg (2021).
211. B. Friedrich and H. Schmidt-Böcking (eds.):  
*Molecular Beams in Physics and Chemistry: From Otto Stern's Pioneering Feats to Present-day Accomplishments*  
Springer, Heidelberg (2021). <https://www.springer.com/gp/book/9783030639624>
210. H. Schwarz and B. Friedrich:  
*Obituary for Rudolf Zahradnik (1928-2020): "To Do What's Right"*  
Theoretical Chemistry Accounts **140**:28 (2021). <https://doi.org/10.1007/s00214-021-02724-1>
209. B. Friedrich:  
*Manipulation of Molecules by Combined Permanent and Induced Dipole Forces*, in *New Horizons in Chemistry: Electric Fields and Structure-Reactivity Aspects*, Sason Shaik and Thijs Stuyver (eds.)  
The Royal Society of Chemistry (2021). ePub eISBN 978-1-83916-305-0
208. H. Schwarz and B. Friedrich:  
*Rudolf Zahradnik (1928-2020)*  
Chemistry World, 4 February 2021.

207. B. Friedrich:  
*A Paramount Problem Solved at Last: Paramagnetic Catalysis of Ortho-Para Hydrogen Conversion*  
Natural Sciences (2021) Nat. Sci. 2021;e10004 <https://doi.org/10.1002/ntls.10004>
206. T. Bielik and B. Friedrich:  
*Much out of Nothing: The Relationship between Fritz Haber and Chaim Weizmann*  
Israel Chemist and Chemical Engineer, Issue 7, 22-29 (2021). <https://doi.org/10.51167/ice00004>
205. H. Schwarz und B. Friedrich:  
*Rudolf Zahradnik (1928-2020): "Tue, was richtig ist!"*  
Nachrichten aus der Chemie-GDCh **69**, 94 (2021).
204. B. Friedrich and D. Herschbach:  
*Jan Peter Toennies: An Ebullient Serendipitous Adventurer*  
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203. B. Friedrich, M. Bronner, V. Yam, and G. Meijer:  
*Editorial: Natural Sciences is debuting*  
Natural Sciences (2020) Nat. Sci. 2021;e10001 <https://doi.org/10.1002/ntls.10001>
202. Y. Ding, S.S. Kale, Y. Chen, B. Friedrich, and S. Kais:  
*Spin-momentum entanglement in a Bose-Einstein condensate*  
Physical Chemistry Chemical Physics **22**, 25669-25674 (2020).
201. T. Bielik and B. Friedrich:  
*Far Apart and Close Together: Fritz Haber and Chaim Weizmann*  
Israel Journal of Chemistry **60**, 1061-1076 (2020).
200. B. Friedrich:  
*Pioneers of X-ray spectroscopy*  
Vesmir **99**, 39 (2020).
199. B. Friedrich, D. Herschbach, H. Schmidt-Böcking, and J.P. Toennies: *An international symposium (Wilhelm and Else Heraeus Seminar # 702) marked the centennial of Otto Stern's first molecular beam experiment and the thriving of atomic physics; a European Physical Society Historic Site was inaugurated*  
Frontiers in Physics **7**, 208 (2019).
198. J. Fischer, F. Schlaghauser, E.-M. Lottner, A. Slenczka, L. Christiansen, H. Stapelfeldt, M. Karra, B. Friedrich, Th. Mullan, M. Schütz, and D. Usvyat:  
*Heterogeneous clusters of phthalocyanine and water prepared and probed in superfluid helium nanodroplets*  
J. Phys. Chem. A (Javier Aoiz Festschrift) **123**, 1057-1064 (2019).
197. B. Friedrich:  
*Book Review: For Science, King, and Country: The prodigious life and untimely death of "Harry" Moseley*

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196. B. Friedrich and A.S. Travis:

*The life and work of Fritz Haber revisited on the 150th anniversary of his birth, in Berlin, Jerusalem, and Karlsruhe*

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195. B. Friedrich:

*Fritz Haber at One Hundred Fifty: Evolving views of and on a German Jewish Patriot*

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194. B. Friedrich, M. Popplow, and A.S. Travis:

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193. B. Friedrich and D. Hoffmann:

*Clara Haber, nee Immerwahr: In and out of her element*

in Brigitte Van Tiggelen and Annette Lykknes (eds.): *Women in their Element*

World Scientific, Singapore (2019).

192. J. Fischer, S. Fuchs, A. Slenczka, M. Karra, and B. Friedrich:

*Microsolvation of porphine molecules in superfluid helium nanodroplets as revealed by optical line shape at the electronic origin*

J. Chem. Phys. **149**, 244306 (2018).

191. A. Slenczka and B. Friedrich:

*Solvation and cluster formation in helium nanodroplets*

SciTech Europa Quarterly 29 (2018). [www.scitecheuropa.eu](http://www.scitecheuropa.eu).

190. M. Mirahmadi, B. Schmidt, M. Karra, and B. Friedrich:

*Dynamics of polar polarizable rotors acted upon by unipolar electromagnetic pulses: From the sudden to the adiabatic regime*

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189. B. Friedrich:

*Molecules Dressed in Electromagnetic Fields*

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188. K. Schatz, B. Friedrich, S. Becker, and B. Schmidt:

*Symmetric tops in combined electric fields: Conditional quasisolvability via the quantum Hamilton-Jacobi theory*

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187. B. Friedrich, D. Herschbach, S. Kais, and B. Schmidt:

*Molecules enhanced by electromagnetic fields*

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186. S. Fuchs, J. Fischer, A. Slenczka, M. Karra, and B. Friedrich:

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J. Chem. Phys. **148**, 144301 (2018).

185. B. Friedrich:

*The exacting task of bringing molecules to attention*

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<https://doi.org/10.26320/SCIENTIA64>.

184. B. Friedrich:

*Not just a branch but the blossom of the tree of knowledge: The rise – and blossoming – of physical and theoretical chemistry*

Chemicke listy **111**, 654 (2017).

183. B. Friedrich, D. Hoffmann, F. Schmaltz, J. Renn, and M. Wolf (Eds.):

*One Hundred Years of Chemical Warfare: Research, Deployment, Consequences*

Springer-Nature, Heidelberg (2017).

182. B. Friedrich and D. Hoffmann:

*Clara Immerwahr: A life in the shadow of Fritz Haber*

in *One Hundred Years of Chemical Warfare: Research, Deployment, Consequences*, pp. 45-

68. B. Friedrich, D. Hoffmann, F. Schmaltz, J. Renn, and M. Wolf (Eds.).

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181. B. Friedrich and J. James:

*From Berlin-Dahlem to the Fronts of WWI: The Role of Fritz Haber and his Kaiser Wilhelm Institute in German Chemical Warfare*

in *One Hundred Years of Chemical Warfare: Research, Deployment, Consequences*, pp. 25-

44. B. Friedrich, D. Hoffmann, F. Schmaltz, J. Renn, and M. Wolf (Eds.).

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180. B. Friedrich (Ed.), G. Ertl, J. Jortner, and J. Polanyi:

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179. S. Becker, M. Mirahmadi, B. Schmidt, K. Schatz and B. Friedrich:

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178. J.M. Doyle, B. Friedrich, and E. Narevicius:

*Physics and Chemistry with Cold Molecules*

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177. Qi Wei, Y. Cao, S. Kais, B. Friedrich, and D. Herschbach:

*Quantum computation using arrays of  $N$  polar molecules in pendular states*

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176. B. Friedrich:

- Michael Polanyi (1891-1976): The life of the mind*  
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175. G. Ertl and B. Friedrich:  
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174. Lee Yeong Kim, Ju Hyeon Lee, Hye Ah Kim, Sang-Kyu Kwak, Bretislav Friedrich, Bum Suk Zhao:  
*Effect of rotational-state-dependent molecular alignment on the optical dipole force*  
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173. K. Sharma and B. Friedrich:  
*Pair-eigenstates and mutual alignment of coupled molecular rotors in a magnetic field*  
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172. B. Friedrich and D. Hoffmann:  
*Clara Haber, nee Immerwahr (1870-1915): Life, work, and legacy*  
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171. M. Karra, K. Sharma, B. Friedrich, S. Kais, and D. Herschbach:  
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*How did the tree of knowledge get its blossom? The rise of Physical and Theoretical Chemistry, with an eye on Berlin & Leipzig*  
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169. K. Sharma and B. Friedrich:  
*Directional properties of polar paramagnetic molecules subject to congruent electric, magnetic and optical fields*  
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168. B. Friedrich:  
*Fritz Haber und der "Krieg der Chemiker"*  
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167. B. Schmidt and B. Friedrich:  
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166. B. Friedrich:  
*Fritz Haber and the "Chemists' War"*  
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165. B. Schmidt and B. Friedrich:  
*Supersymmetry and topology of the planar quantum pendulum*

164. B. Friedrich:

*Science is Culture. An interview with Prof. Bretislav Friedrich*

Neuron, a Science Foundation <http://www.nfneuron.cz/cs/novinky/rozhovor-prof-bretislav-friedrich-veda-je-kultura/> (2014)

163. B. Friedrich:

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162. B. Schmidt and B. Friedrich:

*Topology of surfaces for molecular Stark energy, alignment and orientation generated by combined permanent and induced electric dipole interactions*

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158. M. Badino and B. Friedrich:

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- Molecular Physics **110**, 1549 (2012).
154. B. Friedrich, S. Kais, and D. Mazziotti:  
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151. B. Friedrich: *Kolotoc pro studene molekuly (Carousel for cold molecules)*  
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146. B. Friedrich, D. Hoffmann, and J. James:  
*One hundred years of the Fritz Haber Institute*  
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145. B. Friedrich:  
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