

CURRICULUM VITAE

for Leif Holmlid, born 1942 in Lysekil, Sweden.

Male. Married since 1969, three daughters born 1976, 1979 and 1981.

Degrees

1. Fil.kand. and fil.mag. Mathematics, physics, chemistry, theoretical philosophy. Examina, University of Göteborg 1965.

2. Filosofie doktorsexamen (Ph. D.), University of Göteborg 1974-01-11. Physical Chemistry. Title: "Crossed molecular beam alkali - alkali halide chemical scattering: Apparatus, surface ionization detection and absolute measurements of cross sections". Supervisor Prof. J.P. Toennies, Bonn.

4. Docent i fysikalisk kemi (Associate professor), University of Göteborg 1976.
Biträdande professor (Professor), University of Göteborg 1996.
Professor in Physical Chemistry, especially Energy Related Fundamental Research, Göteborg University 1999.

5. Present affiliation

Professor Emeritus, University of Gothenburg, from 2009.

A contract exists for my work within the Department of Chemistry and Molecular Biology giving me access to computer and laboratory facilities in the same way as if I was still employed.

6. Previous employments

Special research position at the Swedish Natural Science Research Council (särskild forskare), in Chemical primary processes and their dynamics, 1979 - 1984 (NFR funded).
Chairman (prefekt) at the Department of Physical Chemistry GU, 1985-1991.

Högskolelektor (Associate professor, Lecturer) in Physical Chemistry, especially energy related fundamental research, at University of Göteborg, 1988-1996 (GU funded) (50% teaching).

Högskole-/universitetslektor (Associate professor, Lecturer), special research position, 50%, at University of Göteborg, 1992-1996 (100% research).

Biträdande professor (Professor), University of Göteborg 1996-1998 (GU funded) (50% research).

Professor in Chemistry, especially Energy Related Fundamental Research, University of Gothenburg 1999-2009.

8. Supervision of doctoral theses

1. Kjell Rynefors, 1977. Opponent: J.P. Toennies, Göttingen.
2. Jim O. Olsson, 1977. Opponent: E. Hulpke, Göttingen.
3. Kenneth Möller, 1985. Opponent: B. Kasemo, Göteborg.
4. Gunnar Nyman, 1986. Opponent: R. Schinke, Göttingen.
5. Jan Davidsson, 1988. Opponent: R. McCarroll, Paris.
6. Per-Anders Elofson, 1988. Opponent: J.C. Whitehead, Manchester.
7. Nikola Markovic', 1989. Opponent: J. Troe, Göttingen.

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8. Jan B.C. Pettersson, 1990. Opponent: G. Ertl, Berlin.
9. Ulla Wilhelmsson, 1991. Opponent: G.D. Billing, Köpenhavn.
10. Jörgen Lundin, 1993. Opponent: F.W. Röllgen, Bonn.
11. Tony Hansson, 1993. Opponent: R.E. Palmer, Cambridge.
12. Robert Svensson, 1994. Opponent: L.R. Wolff, Energy Conversion Systems, Eindhoven.
13. Elisabeth Wallin, 1994. Opponent: R. Grice, Manchester.
14. Klas Engvall, 1994. Opponent: M. Bowker, Reading.
15. Jiayi Wang, 1999. Opponent: E.B.B. Campbell, Göteborg.
16. Shahriar Badiei, 2005. Opponent: K. Müller-Dethlefs, Manchester.

9. Docents

The following students from my group have reached the Docent level:

Kjell Rynefors (deceased)

Jim O. Olsson, at a private company

Gunnar Nyman, professor, at University of Gothenburg

Jan Davidsson, professor, at Uppsala University

Nikola Markovic, docent position, at Chalmers University

Jan Pettersson, professor, at University of Gothenburg

Tony Hansson, professor, at AlbaNova University Center, Stockholm.

Klas Engvall, professor, at Royal Institute of Technology, Stockholm.

10. Publications

I have at present 236 publications in my list of publications.

My h-index is 32 according to ResearchGate and I am cited 3309 times.

My score in ResearchGate is 41.54.

LIST OF PUBLICATIONS 2009-2017

Total number of publications in this period is 50. Total citations in this period are 1376.
Google Scholar is used for numbers of citations.

1. Peer-reviewed original articles

*236. L. Holmlid, "The solar wind proton ejection mechanism: experiments with ultra-dense hydrogen agree with observed velocity distributions".

J. Geophys. Res. - Space Phys. (2017). doi: 10.1002/2017JA024498.

* 235. L. Holmlid, "Mesons from laser-induced processes in ultra-dense hydrogen H(0)".
PLOS ONE 12 (2017) e0169895. Doi:10.1371/journal.Pone.0169895.

234. L. Holmlid, "Emission spectroscopy of IR laser-induced processes in ultra-dense deuterium D(0): Rotational transitions with spin values $s = 2, 3$ and 4 ".

J. Mol. Struct. 1130 (2017) 829–836. Doi: 10.1016/j.molstruc.2016.10.091. Number of citations: 1.

* 233. L. Holmlid, "Leptons from decay of mesons in the laser-induced particle pulse from ultra-dense hydrogen H(0)".

Int. J. Modern Phys. E 25 (2016) 1650085. DOI: 10.1142/S0218301316500853. Number of citations: 1.

230. L. Holmlid and B. Kotzias, "Phase transition temperatures of 405-725 K in superfluid ultra-dense hydrogen clusters on metal surfaces".

AIP Advances 6 (2016) 045111. doi: 10.1063/1.4947276. Number of citations: 8.

* 229. L. Holmlid and S. Olafsson, "Charged particle energy spectra from laser-induced processes: nuclear fusion in ultra-dense deuterium D(0)".

Int. J. Hydrogen Energy 41 (2016) 1080-1088. Doi:10.1016/j.ijhydene.2015.10.072. Number of citations: 6.

* 228. L. Holmlid, "Nuclear particle decay in a multi-MeV beam ejected by pulsed-laser impact on ultra-dense hydrogen H(0)".

Int. J. Modern Phys. E 24 (2015) 1550080. DOI: 10.1142/S0218301315500809. Number of citations: 4.

227. P. Stelmachowski, P. Legutko, T. Jakubek, P. Indyka, Z. Sojka, L. Holmlid, A. Kotarba, "Emission of highly excited electronic states of potassium from cryptomelane nanorods".

Phys. Chem. Chem. Phys. 17 (2015) 26289-94. DOI: 10.1039/c5cp04108b. Number of citations: 1.

* 225. L. Holmlid, "Heat generation above break-even from laser-induced fusion in ultra-dense deuterium".

AIP Advances 5 (2015) 087129. doi: 10.1063/1.4928572. Number of citations: 5.

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224. L. Holmlid and S. Olafsson, "Muon detection studied by pulse-height energy analysis: novel converter arrangements".
Rev. Sci. Instrum. 86 (2015) 083306. DOI: 10.1063/1.4928109. Number of citations: 3.
223. L. Holmlid and S. Olafsson, "Spontaneous ejection of high-energy particles from ultra-dense deuterium D(0)".
Int. J. Hydr. Energy 40 (2015) 10559-10567. DOI: 10.1016/j.ijhydene.2015.06.116. Number of citations: 14.
222. L. Holmlid, "MeV particles in a decay chain process from laser-induced processes in ultra-dense deuterium D(0)".
Int. J. Modern Phys. E 24 (2015) 1550026. DOI: 10.1142/S0218301315500263. Number of citations: 7.
221. F. Olofson and L. Holmlid, "Time-of-flight of He ions from laser-induced processes in ultra-dense deuterium D(0)".
Int. J. Mass Spectrom. 374 (2014) 33–38. DOI: 10.1016/j.ijms.2014.10.004. Number of citations: 9.
220. L. Holmlid and S.R. Fuelling, "Meissner effect in ultra-dense protium p(l=0, s=2) at room temperature: superconductivity in large clusters of spin-based matter".
J. Cluster Science 26 (2015) 1153-1170. DOI 10.1007/s10876-014-0804-3. Number of citations: 6.
219. F. Olofson and L. Holmlid, "Electron-positron pair production observed from laser-induced processes in ultra-dense deuterium D(-1)".
Laser Part. Beams 32 (2014) 537-548. Doi:10.1017/S0263034614000494. Number of citations: 9.
218. F. Olofson and L. Holmlid, "Intense ionizing radiation from laser-induced processes in ultra-dense deuterium D(-1)".
Int. J. Modern Phys. E 23 (2014) 1450050. Number of citations: 3
217. L. Holmlid, "Ultra-dense hydrogen H(-1) as the cause of instabilities in laser compression-based nuclear fusion".
J. Fusion Energy 33 (2014) 348-350. Number of citations: 9.
216. L. Holmlid, "Two-collector timing of 3-14 MeV/u particles from laser-induced processes in ultra-dense deuterium".
Int. J. Modern Phys. E 22 (2013) 1350089. Number of citations: 13.
215. L. Holmlid, "Excitation levels in ultra-dense hydrogen p(-1) and d(-1) clusters: structure of spin-based Rydberg Matter".
Int. J. Mass Spectrom. 352 (2013) 1- 8. Number of citations: 21.
214. L. Holmlid, "Direct observation of particles with energy >10 MeV/u from laser-induced processes with energy gain in ultra-dense deuterium".
Laser Part. Beams 31 (2013) 715–722. Number of citations: 16.

213. L. Holmlid, "Laser-mass spectrometry study of ultra-dense protium p(-1) with variable time-of-flight energy and flight length".
Int. J. Mass Spectrom. 351 (2013) 61-68. Number of citations: 16.
211. L. Holmlid, "Laser-induced fusion in ultra-dense deuterium D(-1): optimizing MeV particle ejection by carrier material selection".
Nucl. Instr. Meth. B 296 (2013) 66-71. Number of citations: 18.
210. P.U. Andersson and L. Holmlid, "Fast atoms and negative chain cluster fragments from laser-induced Coulomb explosions in a super-fluid film of ultra-dense deuterium D(-1)".
Phys. Scr. 86 (2012) 045601. Number of citations: 10.
208. F. Olofson and L. Holmlid, "Superfluid ultra-dense deuterium D(-1) on polymer surfaces: structure and density changes at a polymer-metal boundary".
J. Appl. Phys. 111, 123502 (2012). Number of citations: 18.
206. F. Olofson and L. Holmlid, "Detection of MeV particles from ultra-dense protium p(-1): laser-initiated self-compression from p(1)".
Nucl. Instr. Meth. B 278 (2012) 34-41. Number of citations: 19.
205. L. Holmlid, "MeV particles from laser-initiated processes in ultra-dense deuterium D(-1)".
Eur. Phys. J. A 48 (2012) 11. Number of citations: 19.
204. P.U. Andersson, L. Holmlid, and S.R. Fuelling, "Search for superconductivity in ultra-dense deuterium D(-1) at room temperature: depletion of D(-1) at field strength > 0.05 T".
J. Supercond. Novel Magn. 25 (2012) 873-882. Number of citations: 25.
203. P.U. Andersson and L. Holmlid, "Cluster ions D_N^+ ejected from dense and ultra-dense deuterium by Coulomb explosions: fragment rotation and D^+ backscattering from ultra-dense clusters in the surface phase".
Int. J. Mass Spectrom. 310 (2012) 32-43. Number of citations: 22.
201. P.U. Andersson and L. Holmlid, "Fusion generated fast particles by laser impact on ultra-dense deuterium: rapid variation with laser intensity".
J. Fusion Energy 31 (2012) 249-256. Number of citations: 25.
200. L. Holmlid, "Sub-nanometer distances and cluster shapes in dense hydrogen and in higher levels of hydrogen Rydberg Matter by phase-delay spectroscopy".
J. Nanopart.Res. 13 (2011) 5535-5546. Number of citations: 6.
199. L. Holmlid, "Diffuse interstellar bands (DIB) in space: almost all bands calculated from co-planar doubly excited He and metal atoms embedded in Rydberg Matter".
Astrophys. Space Sci. 336 (2011) 391-412.
198. L. Holmlid, "Deuterium clusters D_N and mixed K-D and D-H clusters of Rydberg Matter: high temperatures and strong coupling to ultra-dense deuterium".

J Clust Sci 23 (2012) 95-114. Number of citations: 12.

197. L. Holmlid, "High-charge Coulomb explosions of clusters in ultra-dense deuterium D(-1)".

Int. J. Mass Spectrom. 304 (2011) 51–56. Number of citations: 25.

196. P.U. Andersson and L. Holmlid, "Superfluid ultra-dense deuterium D(-1) at room temperature".

Phys. Lett. A 375 (2011) 1344–1347. Number of citations: 35.

195. L. Holmlid, "Large ion clusters H_N^+ of Rydberg Matter: stacks of planar clusters H_7 ".

Int. J. Mass Spectrom. 300 (2011) 50-58. Number of citations: 7.

194. P.U. Andersson, B Lönn and L. Holmlid, "Efficient source for the production of ultra-dense deuterium D(-1) for laser-induced fusion (ICF)".

Rev. Sci. Instrum. 82 (2011) 013503. Number of citations: 34.

193. M. Trebala, W. Bieniasz, L. Holmlid, M. Molenda, and A. Kotarba, "Potassium stabilization in β - $K_2Fe_{22}O_{34}$ by Cr and Ce doping studied by field reversal method".

Solid State Ionics 192 (2011) 664–667. Number of citations: 4.

192. L. Holmlid, "Common forms of alkali metals - new Rydberg Matter clusters of potassium and hydrogen".

J. Clust. Sci. 21 (2010) 637-653. Number of citations: 5.

191. S. Badiei, P.U. Andersson and L. Holmlid, "Laser-driven nuclear fusion D+D in ultra-dense deuterium: MeV particles formed without ignition".

Laser Part. Beams 28 (2010) 313-317. Number of citations: 37.

190. P.U. Andersson and L. Holmlid, "Deuteron energy of 15 MK in a surface phase of ultra-dense deuterium without plasma formation: temperature of the interior of the Sun".

Phys. Lett. A 374 (2010) 2856–2860. Number of citations: 18.

189. S. Badiei, P.U. Andersson and L. Holmlid, "Production of ultra-dense deuterium, a compact future fusion fuel".

Appl. Phys. Lett. 96 (2010) 124103. Number of citations: 35.

187. S. Badiei, P.U. Andersson and L. Holmlid, "Laser-induced variable pulse-power TOF-MS and neutral time-of-flight studies of ultra-dense deuterium".

Phys. Scripta 81 (2010) 045601. Number of citations: 35.

186. P.U. Andersson and L. Holmlid, "Ultra-dense deuterium: a possible nuclear fuel for inertial confinement fusion (ICF)".

Phys. Lett. A 373 (2009) 3067–3070. Number of citations: 33.

185. L. Holmlid, H. Hora, G. Miley and X. Yang, "Ultrahigh-density deuterium of Rydberg matter clusters for inertial confinement fusion targets".

Laser Part. Beams 27 (2009) 529–532. Number of citations: 55.

184. A. Kotarba and L. Holmlid, "Energy-pooling transitions to doubly excited K atoms at a promoted iron-oxide catalyst surface: more than 30 eV available for reaction".
Phys. Chem. Chem. Phys. 11 (2009) 4351-4359. Number of citations: 16.

183. S. Badiei, P. U. Andersson and L. Holmlid, "High-energy Coulomb explosions in ultra-dense deuterium: Time-of-flight mass spectrometry with variable energy and flight length".
Int. J. Mass Spectrom. 282 (2009) 70-76. Number of citations: 42.

182. L. Holmlid, "Nm interatomic distances in Rydberg Matter clusters confirmed by phase-delay spectroscopy".
J. Nanopart. Res. 12 (2010) 273-284. Number of citations: 3.

181. L. Holmlid, "Light in condensed matter in the upper atmosphere as the origin of homochirality: circularly polarized light from Rydberg Matter".
Astrobiol. 9 (2009) 535-542. Number of citations: 12.
News in New Scientist
<http://www.newscientist.com/article/mg20327243.700-trick-of-the-light-made-lifes-molecules-lefthanded.html>.

180. L. Holmlid, "Nuclear spin transitions in the kHz range in Rydberg Matter clusters give precise values of the internal magnetic field from orbiting Rydberg electrons".
Chem. Phys. 358 (2009) 61-67. Number of citations: 5.

179. S. Badiei, P. U. Andersson and L. Holmlid, "Fusion reactions in high-density hydrogen: A fast route to small-scale fusion?"
Int. J. Hydr. Energy 34 (2009) 487-495. Number of citations: 46.

Peer-reviewed conference contributions

231. S. Olafsson and L. Holmlid, "Rydberg phases of hydrogen and low energy nuclear reactions".
Bull. Am. Phys. Soc. 2016/4/16. BAPS.2016.APR.E9.9. Number of citations: 1.

Research review articles

202. L. Holmlid, "Experimental studies and observations of clusters of Rydberg matter and its extreme forms".
J. Cluster Sci. 23 (2012) 5-34. Number of citations: 22.

The five most cited papers with no regard to year of publication

Google Scholar is used for number of citations.

124. L. Holmlid, "Classical energy calculations with electron correlation of condensed excited states - Rydberg Matter".

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Chem. Phys. 237 (1998) 11-19. Number of citations: 73.

77. R. Svensson, L. Holmlid and L. Lundgren, "Semi-conducting low pressure, low temperature plasma of cesium with unidirectional conduction".

J. Appl. Phys. 70 (1991) 1489-1492. Number of citations: 56.

185. L. Holmlid, H. Hora, G. Miley and X. Yang, "Ultrahigh-density deuterium of Rydberg matter clusters for inertial confinement fusion targets".

Laser Part. Beams 27 (2009) 529-532. Number of citations: 55.

134. A. Kotarba, A. Baranski, S. Hodorowicz, J. Sokolowski, A. Szytula, and L. Holmlid, "Stability and excitation of potassium promoter in iron catalysts - the role of KFeO_2 and KAlO_2 phases".

Catal. Letters 67 (2000) 129-134. Number of citations: 55.

68. C. Åman, J.B.C. Pettersson and L. Holmlid, "Field ionizable cesium metal clusters from a foil diffusion source".

Chem. Phys. 147 (1990) 189-197. Number of citations: 54.