

Published papers 2007-2015, Source web of science (2015-02-06). H-index 19, total number of papers in peer reviewed journals 98, total # citations ≈1100, 2 invited book chapters, 2 patents. Several press releases and highlights in daily press.

1. Publications in refereed journals, 2007-2014

1. A. Dzwilewski and T. Wågberg, and L. Edman, **C₆₀ Field-Effect Transistors: The Effects of Polymerization on Electronic Properties and Device Performance**, Phys Rev. B, **75**, 075203 (2007).
Imp. Factor 3.7
2. Y. Zou, B. Liu, M. Yao, Y. Hou, L. Wang, S. Yu, P. Wang, T. Cui, G. Zou, T. Wågberg, and B. Sundqvist, **Raman spectroscopy study on carbon nanotube peapods excited by Near IR laser under high pressure**, Phys. Rev B, **76**, 195417 (2007).
Imp. Factor 3.7
3. A. Iwasiewicz-Wabnig, T. Wågberg, T. L. Makarova, and B. Sundqvist, **Absence of insulator-metal transition in Rb₄C₆₀ under pressure below 2 GPa.**, Phys. Rev. B., **77** 085434 (2007).
Imp. Factor 3.7
4. T. Wågberg, M. Hedenström, A. V. Talyzin, I. Sethson, Y. O. Tsybin, J. M. Purcell, A. G. Marshall, D. Noréus, and Dan Johnels, **Synthesis and Structural Characterization of C₇₀H₃₈**, Angewandte Chemie International Edition, **47**, Issue 15, Date: March 31, 2008, Pages: 2796-2799
Imp. Factor 13.5
5. T. Wågberg, P. R. Hania, N. D. Robinson, J.-H. Shin, P. Matyba, and L. Edman, **On the Limited Operational Lifetime of Light-Emitting Electrochemical Cells**, Adv. Materials, **20**, 1744 (2008).
Imp. Factor 13.9
6. E. Abou-Hamad, Y. Kim, A. V. Talyzin, C. Goze-Bac, D. E. Luzzi, A. Rubio, and T. Wågberg, **Hydrogenation of C₆₀ in peapods: physics and chemistry in nano vessels**, Journal of Physical Chemistry C, **113**, 8583-8587 (2009).
Imp. Factor 4.8
7. E. Abou-Hamad, Y. Kim, A. Rubio, T. Wågberg, A. V. Talyzin, D. Boesch, S. Aloni, A. Zettl, D. E. Luzzi, C. Goze-Bac, **Nanomagnetic Shielding**, J. Chem. Phys., **132**, 021102 (2010).
Imp. Factor 3.3
8. M. Yao, B. M. Andersson, P. Stenmark, B. Sundqvist, B. B. Liu, T. Wågberg, **Synthesis and growth mechanism of C₆₀ nano/microcrystals with different shapes produced by evaporation of C₆₀ solutions based on different aromatic solvents**, Carbon **47**, 1181-1188, 2009.
Imp. Factor 5.4
9. T. Wågberg, B. Liu, G. Orådd, B. Eliasson, and L. Edman, **Cationic Polyfluorene: Conformation and Aggregation in a “Good” Solvent**, European Polymer Journal, **45**, 3230–3235 (2009).
Imp. Factor 2.8
10. A. Dzwilewski, T. Wågberg, and Ludvig Edman, **Facile Patterning of Organic Electronic Materials and Devices**, J. Amer. Chem. Soc., **131** (11) 4006-4011, 2009.

Imp. Factor 9.9

11. M. Yao, B. Sundqvist, T. Wågberg, **Reversible pressure-driven nanoscale phase separation in Rb₄C₆₀**, Phys. Rev. B (Rapid communication) **79**, 081403 (2009).

Imp. Factor 3.7

12. F. Nitze, B. M. Andersson, T. Wågberg, **Ammonia assisted growth of multiwalled carbon nanotubes**, Physica Status Solidi B, 11-12, 2440-2443 (2009).

Imp. Factor 1.2

13. Y. Zou, B. Liu, L. Wang, D. Liu, S. Yu, P. Wang, X. Li, T. Wang, M. G. Yao, B. Zou, T. Cui, and G. Zou, T. Wågberg, B. Sundqvist, **Rotational Dynamics of Confined C₆₀: Near IR Raman Studies under High Pressure**, PNAS, 106, 22135-22138 (2009).

Imp. Factor 9.7

14. E. Abou-Hamad, Y. Kim, T. Wågberg, D. Boesch, S. Aloni, A. Zettl, A. Rubio, D. E. Luzzi and C. Goze-Bac, **Molecular dynamics and phase transition in one dimensional crystal encapsulated inside single wall carbon nanotubes**, ACS Nano, 3, 3878-3883 (2009).

Imp. Factor 11.4

15. H. Ma, B.B. Liu, Q. Li, X. Zhang, Q. Zeng, S. Yu, B. Zou, T. Cui, G. Zou, Z. Liu, T. Wågberg, B. Sundqvist, D. Noreus, **Synchrotron x-ray diffraction and infrared spectroscopy studies of C₆₀H₁₈ under high pressure**, The Journal of Phys. Chem. Lett., 1, 714-719 (2010).

Imp. Factor 6.2

16. M. G. Yao, T. Wågberg, B. Sundqvist, **Electrical transport properties of Na₂C₆₀ under high pressure**, Phys. Rev. B, 80, 115405 (2009).

Imp. Factor 3.2

17. M. G. Yao, V. Pisheda, T. Wågberg, B. Sundqvist, S. Floch, A. San Miguel, , **Laser-induced transformation of Li₄C₆₀ and Na₄C₆₀ polymers into metallic monomeric fulleride phases**, Chem. Phys. Lett. 489, 64-68 (2010).

Imp. Factor 2.4

18. J. Wang, T. Wågberg, B. Eliasson, L. Edman, **Resist-free laser patterning of perfluoro-alkyl functionalized fullerene films**, Organic Electronics, 11, 1595-1604 (2010).

Imp. Factor 4.0

19. M. G. Yao, T. Wågberg, B. Sundqvist, **Effect of high pressure on electrical transport in the Li₄C₆₀ fulleride polymer from 100 to 400 K**, Phys. Rev. B, 81, 155441-155448 (2010).

Imp. Factor 3.7

20. V. Krstic, C. P. Ewels, T. Wågberg, S. M. Ferreira, A. M. Janssen, O. Stephan, M. Glerup, **Indirect Magnetic Coupling in Light-Element-Doped Single-Walled Carbon Nanotubes**, ACS Nano, 4, 5081-5086 (2010).

Imp. Factor 11.4

21. F. Nitze, E. Abou-Hamad, T. Wågberg, **Carbon nanotubes and helical carbon nanofibers grown by chemical vapour deposition on C₆₀-fullerene supported Pd nanoparticles**, Carbon, 49, 1101-1107 (2011).

Imp. factor 5.4

22. M. G. Yao, P. Stenmark, E. Abou-Hamad, F. Nitze, J. A. Qin, C. Goze-Bac, T. Wågberg, **Confined adamantane molecules assembled to one dimension in carbon nanotubes**, Carbon, 49, 1159-1166 (2011).

Impact factor 5.4

23. E. Abou-Hamad, M. R. Babaa, M. Bouhrara, Y. Kim, Y. Saih, S. Dennler, F. Mauri, J. M. Basset, C. Goze-Bac, T. Wågberg, **Structural properties of carbon nanotubes derived from (13)C NMR**, Physical Review B, 84, 165417 (1-8) (2011).

Imp. factor 3.7

24. M. G. Yao, V. Pishedda, B. Sundqvist, T. Wågberg, M. Mezouar, R. Debord, A. San Miguel, **Pressure-induced transformation in Na4C60 polymer: X-ray diffraction and Raman scattering experiments**, Physical Review B, 84, 144106 (1-7) (2011).

Imp. factor 3.7

25. J. Wang, C. Larsen, T. Wågberg, L. Edman, **Direct UV Patterning of Electronically Active Fullerene Films**, Advanced Functional Materials, 21, 3723-3728 (2011).

Imp. factor 10.2

26. D. Liu, M. G. Yao, Q. J. Li, W. Cui, B. Zou, T. Cui, B. B. Liu, B. Sundqvist, T. Wågberg, **High pressure and high temperature induced polymerization of C(60) nanotubes**, Crystengcomm, 13, 3600-3605 (2011).

Imp. factor 3.8

27. D. Liu, M. G. Yao, L. Wang, Q. J. Li, W. Cui, B. Liu, R. Liu, B. Zou, T. Cui, B. B. Liu, J. Liu, B. Sundqvist, T. Wågberg, **Pressure induced transitions in C70 nanotubes**, J. Phys. Chem. C, 115, 8918-8922 (2011).

Imp. factor 4.8

28. E. Abou-Hamad, C. Goze Bac, F. Nitze, M. Schmidt, R. Aznar, M. Mehring, T. Wågberg, **Electronic properties of Cs-intercalated single-walled carbon nanotubes derived from nuclear magnetic resonance**, New Journal of Physics, 13, 053045 (1-6) (2011).

Imp. factor 4.2

29. F. Nitze, M. Mazurkiewicz, A. Malolepszy, A. Mikołajczuk, P. Kedzierzawski, C. W. Tai, G. Z. Hu, K. J. Kurzydłowski, L. Stobinski, A. Borodzinski, T. Wågberg, **Synthesis of palladium nanoparticles decorated helical carbon nanofiber as highly active anodic catalyst for direct formic acid fuel cells**, Electrochimica Acta, 63, 323-328 (2012).

Imp. factor 3.8

30. M. G. Yao, X. H. Fan, D. D. Liu, B. B. Liu, T. Wågberg, **Synthesis of differently shaped C(70) nano/microcrystals by using various aromatic solvents and their crystallinity-dependent photoluminescence**, Carbon, 50, 209-215 (2012)

Imp. factor 5.4

31. G. Z. Hu, F. Nitze, H. R. Barzegar, T. Sharifi, A. Mikołajczuk, C. W. Tai, A. Borodzinski, T. Wågberg, **Palladium nanocrystals supported on helical carbon nanofibers for highly efficient electro-oxidation of formic acid, methanol, and ethanol in alkaline electrolytes**, Journal of Power Sources, 209, 236-242 (2012). Highly cited paper in engineering (top 1% of all papers, related to field and publication year).

Imp. factor 5.0

32. G. Z. Hu, F. Nitze, T. Sharifi, H. R. Barzegar, T. Wågberg, **Self-assembled palladium nanocrystals on helical carbon nanofibers as enhanced electrocatalysts for electro-oxidation of small molecules**, *Journal of Materials Chemistry*, 22, 8541-8546 (2012).
Imp. factor 6.0
33. T. Sharifi, F. Nitze, H. R. Barzegar, C. W. Tai, M. Mazurkiewicz, A. Malolepszy, L. Stobinski, T. Wågberg, **Nitrogen doped multiwalled carbon nanotubes produced by CVD-correlating XPS and Raman spectroscopy for the study of nitrogen inclusion**, *Carbon*, 50, 3535-3541 (2012).
Imp. factor 5.4
34. H. R. Barzegar, F. Nitze, T. Sharifi, M. Ramstedt, C. W. Tai, A. Malolepszy, L. Stobinski, T. Wågberg, **Simple Dip-Coating Process for the Synthesis of Small Diameter Single-Walled Carbon Nanotubes—Effect of Catalyst Composition and Catalyst Particle Size on Chirality and Diameter**, *Journal of Phys. Chem. C*, 116 (22), 12232–12239 (2012).
Imp. factor 4.8
35. G. Z. Hu, T. Sharifi, F. Nitze, H. R. Barzegar, C. W. Tai, T. Wågberg, **Phase-Transfer Synthesis of Amorphous Palladium Nanoparticle-Functionalized 3D Helical Carbon Nanofibers and Its Highly Catalytic Performance towards Hydrazine Oxidation** *Chemical Physics Letters*, 543, 96-100 (2012).
Imp. factor 2.4
36. C. Larsen, H. R. Barzegar, F. Nitze, T. Wågberg, L. Edman, **On the fabrication of crystalline C60 nanorod transistors from solution**, *Nanotechnology*, 23 (34), 344015 (2012).
Imp. factor 4.0
37. L. Jiang, M. G Yao, B. Liu, Q. Li, R. Liu, H. Lu, S. Lu, C. Gong, B. Zou, T. Cui, and B. B Liu, G. Z Hu and T. Wågberg, **Controlled Synthesis of CeO₂/Graphene Nanocomposites with Highly Enhanced Optical and Catalytic Properties**, *Journal of Phys. Chem. C*, 116 (21), 11741–11745 (2012).
Imp. factor 4.8
38. H. R. Barzegar, F. Nitze, C. W. Tai, T. Wågberg, **Water Assisted Growth of C60 Rods and Tubes by Liquid–Liquid Interfacial Precipitation Method**, *Molecules*, 17(6), 6840-6853 (2012).
Imp. factor 2.4
39. T. Sharifi, G. Z. Hu, X. Jia, H. R. Barzegar, T. Wågberg, **Formation of active sites for oxygen reduction reactions by transformation of nitrogen functionalities in nitrogen-doped carbon nanotubes**, *ACS Nano*, 6 (10), 8904-8912 (2012). Highly cited paper in chemistry (top 1% of all papers, related to field and publication year).
Imp. factor 11.4
40. H. R. Barzegar, C. Larsen, L. Edman, T. Wågberg, **Solution-Based Photo-Transformation of C60 Nanorods: Towards Improved Electronic Devices**, *Particle and particle systems characterization*, 30, 715-720 (2013).
41. T. Sharifi, E. Gracia-Espino, G. Z. Hu, X. Jia, H. R. Barzegar, F. Nitze, P. Nordblad, C. W. Tai, T. Wågberg, **Formation of nitrogen-doped graphene nanoscrolls by adsorption of magnetic γ -Fe₂O₃ nanoparticles**, *Nature Communications*, 4, 2319 (2013).

Imp. factor 10.4

42. X. Jia, G. Z. Hu, F. Nitze, H. R. Barzegar, T. Sharifi, C. W. Tai, T. Wågberg, **Synthesis of Palladium/Helical Carbon Nanofibers Hybrid Nanostructures and Their Application for Hydrogen Peroxide and Glucose Detection**, ACS Applied Materials and Interfaces, 5, 12017-12022 (2013). **

Imp. factor 6.0

43. H. R. Barzegar, E. Gracia-Espino, T. Sharifi, F. Nitze, T. Wågberg, **On the Nitrogen Doping Mechanism in Small Diameter Single Walled Carbon Nanotubes; Impact on Electronic Properties and Growth Selectivity**, Journal of Physical Chemistry C, 117, 25805-25816 (2013).

Imp. factor 4.8

44. E. Gracia-Espino, X. Jia, and T. Wågberg, **Improved Oxygen Reduction Performance of Pt–Ni Nanoparticles by Adhesion on Nitrogen-Doped Graphene**, Journal of Physical Chemistry C, 118, 5, 2804-2811 (2014).

Imp. factor 4.8

45. G. Z. Hu, F. Nitze, X. Jia, T. Sharifi, H. R. Barzegar, E. Gracia-Espino, T. Wågberg, **Reduction free room temperature synthesis of a durable and efficient Pd/ordered mesoporous carbon composite electrocatalyst for alkaline direct alcohols fuel cell**, RSC Advances, 4, 676-682 (2014).

Imp. factor 3.7

46. H. R. Barzegar, G. Z. Hu, C. Larsen, L. Edman, T. Wågberg, **Palladium Nanocrystals Supported on Photo-Transformed C60 Nanorods -Effect of Crystal Morphology and Electron Mobility on the Electrocatalytic activity towards Ethanol Oxidation**, Carbon, 73, 34-40 (2014).

Imp. factor 6.2

47. E. Gracia-Espino, G. Z. Hu, A. Shchukarev, **Understanding the Interface of Six-Shell Cuboctahedral and Icosahedral Palladium Clusters on Reduced Graphene Oxide: Experimental and Theoretical Study**, Journal of the American Chemical Society, 136, 18, 6626-6633 (2014).

Imp. factor 10.2

48. F. Nitze, R. Sandström, H. R. Barzegar, G. Z. Hu, M. Mazurkiewicz, A. Malolepszy, L. Stobinski, T. Wågberg, **Direct support mixture painting, using Pd(0) organo-metallic compounds - an easy and environmentally sound approach to combine decoration and electrode preparation for fuel cells**, Journal of Materials Chemistry A, 2, 20973-20979 (2014).

Imp. factor 6.0

49. G. Z. Hu, F. Nitze, X. Jia, E. Gracia-Espino, J. Y. Ma, H. R. Barzegar, T. Sharifi, X. E. Jia, A. Shchukarev, L. Lu, C. S. Ma, G. Yang, T. Wågberg, **Small Palladium islands embedded in palladium-tungsten bimetallic nanoparticles form catalytic hot-spots for oxygen reduction**. Nature Communications, 5, 5253 (2014).

Imp. factor 10.4

50. H. R. Barzegar, E. G. Gracia-Espino, A. Yan, C. Ojeda-Aristizabal, G. I. Dunn, T. Wågberg, and A. Zettl, **C₆₀/Collapsed Carbon Nanotube Hybrids: A Variant of Peapods**, *Nano letters*, **15**, 829–834 (2015).

Imp. factor 12.4

51. T. Sharifi, M. Valvo, E. G. Gracia-Espino, R. Sandström, K. Edström, T. Wågberg, **Hierarchical self-assembled structures based on nitrogen-doped carbon nanotubes as advanced negative electrodes for Li-ion batteries and 3D microbatteries**, *Journal of Power Sources*, **279**, 581-592 (2015).

*Imp. factor 6.0***2. Conference proceedings**

Our group participates with invited talks, contributed talks and posters in about 3-4 conferences each year. In total 15-20 has been published as proceedings.

3. Books and other publications

1. *T. Wågberg, and B. Sundqvist, **Pressure-induced polymers of C₆₀**, invited review, “**Fullerene-related materials**”, *Kluwer/Springer-Verlag*, edited by Professor. S. Margadonna.
2. *M. Hedenström, T. Wågberg and D. Johnels, **NMR spectroscopy of hydrogenated fullerenes**, invited review, **Fullerenes · The Hydrogenated Fullerenes**, Cataldo, F., Iglesias-Groth, S. (Eds.), Vol. 2, 2010, ISBN 978-1-4020-9886-4, 2010.

4. Patents

1. L. Edman, A. Dzwilewski, and T. Wågberg.
Patterning of Fullerene Materials for Efficient Organic Electronic Devices. Provisional U.S. Patent No. 61/127,104 (filed: May 9, 2008).
2. F. Nitze, G. Z. Hu, and T. Wågberg.
Carbon nanostructures for catalyst support. Provisional U.S. Patent No. 61/127,104 (filed: March 13, 2011).

5. Popular science presentations

1. Numerous popular science lectures for various audiences, public, teachers, schools.
2. Radio interview in Sveriges Radio (P4),
<http://sverigesradio.se/sida/artikel.aspx?programid=109&artikel=5619466>
3. Highlighted in Västerbottenskuriren: <http://www.vk.se/954227/framtidens-batteri-utvecklas-i-umea>