

CURRICULUM VITAE

- Name :** Håkan Tinnerberg
- Born :** 650614
- Education**
- Associated Professor Occupational and Environmental Hygiene, Sahlgrenska Academy, Göteborgs Universitet, 2022-03-21-
- Associated Professor Occupational and Environmental Hygiene, Medical Faculty, Lund University, 2004-08-18—2022-03-21
- Certified Occupational and environmental hygienist, 2004-05-04-
- PhD work environment technology, Lund Technical University, 1996-12-05
- Master of Science (Chemistry focusing on occupational hygiene) Lund Technical University, 1991-11-17.
- Rewards:** The Occupational Hygienist of the Year 2015, prize from the Swedish Occupational and Environmental Hygienic association.
- Employments :**
- 2019-07-01- Occupational and environmental hygienist at Occupational and Environmental Medicine, Sahlgrenska University Hospital, Gothenburg (100%).
- 2018-01-01—2019-06-30 Researcher, Institute of Environmental Medicine, Karolinska institute (40%).
- 2018-01-08 – 2019-06-30 Occupational and environmental hygienist at Occupational and Environmental Medicine, Sahlgrenska University Hospital, Gothenburg (60%).
- Head of department of Occupational and Environmental Medicine, Region Skåne 2015-05-01—2017-04-12.
- Occupational and environmental hygienist and head of the section of Occupational and Environmental Hygienist at Occupational and Environmental Medicine Region Skåne, 2001-02—2015-04-31
- Research assistant at the department of Occupational and Environmental Medicine, Lunds Universitet, 1997-01--2001-01
- Supervisor:** Main supervisor to PhD-student Therese Klang, accepted 2021, Göteborgs Universitet

Main supervisor to PhD-student Hanna Landberg (Lund University), accepted 2013-06-01 Dissertation January 2018.

Co-supervisor:

PhD-student Carl-Johan Sennbro Dissertation 2005-02-04 (Lund University).

PhD-student Emilie Stroh Dissertation 2011-01-11 (Lund University).

PhD-student Ebba Malmqvist Dissertation 2013-02 (Lund University).

PhD-student Ayman Alhmadow Dissertation 201904 (Karolinska Institute)

Grants:

- 1) Isocyanates – Exposure/adducts/biological monitoring/ Medical effects/ dose-response (2 536 000 SEK;2001-2003). Forskningsrådet för arbetsliv och socialvetenskap (FAS).
- 2) Responsible for the Swedish part in: Cancer in persons working in dry cleaning in the Nordic countries (121 000 US\$;2001-2004). Halogenated Solvents Industry Alliance, Inc. Main PI Elsebeth Lynge Institute of Public Health, University of Copenhagen.
- 3) Measurements of personal exposure to carcinogenic substances in urban air (1 000 000 SEK;2003-2004). Naturvårdsverket.
- 4) Exposure - Exposure – comparison between measurements and calculations based on dispersion modelling. Naturvårdsverket. 380 000 SEK;2004-2005.
- 5) Isocyanates – Exposure/adducts/biological monitoring/ Medical effects/ dose-response (2 225 000 SEK). Forskningsrådet för arbetsliv och socialvetenskap (FAS). 2004-2006.
- 6) Measurements of personal exposure to carcinogenic substances in urban air (1 250 000 SEK;2008-2009). Naturvårdsverket.
- 7) Exposure to irritants and effects on the airways among chimney sweeps (2 460 000 SEK). Forskningsrådet för arbetsliv och socialvetenskap (FAS). 2007-2010.
- 8) Exposure to irritants and effects on the airways among chimney sweeps (75 000 SEK). Svenska kommunalarbetsförbundet 2008-2010.
- 9) Dissemination– Comparison between personal exposure and stationary measurements (225 000 SEK) 2011. Naturvårdsverket.
- 10) Surveillance of Chemical exposure in the workin life – Tools for exposure assessment for prevention, surveillance and research and development (3 100 000 SEK). Forskningsrådet för arbetsliv och socialvetenskap (FAS) 2009-2011.
- 11) The exposure modelling tool ART in practice. AFA-försäkring (1 700 000 SEK) 2010-2013.
- 12) Chimney sweeps exposure to soot – exposure assessment, surveillance, and evaluation of a new technique. AFA-Försäkring (1 577 000 SEK) 2020-2022.
- 13) Exposure to isocyanic acid. AFA Försäkring (1 570 000 SEK) 2021-2023
- 14) Evaluation of alternative methods for measuring exposure to emissions from diesel engines. AFA försäkring (2 567 000 SEK) 2021-2023.
- 15) Development of methods for exposure and risk assessment for occupational handling of material in the graphene family. VINNOVA (1 757 500 SEK) 2021-2023.

- 16) Methods for exposure assessment for soot. Myndigheten för Samhällsskydd och beredskap (MSB). (1 219 360 SEK) 2022-2024.
- 17) Evaluation of methods for measuring graphene in work place air. VINNOVA (440 000 SEK) 2022-2023.
- 18) Exposure to nano material. AFA försäkring (3 479 000 SEK) 2023-2026.

Publications

PhD thesis

Tinnerberg H. Isocyanates – Assessment of human exposure. Lund 1996. Lunds Universitet, Arbetsmiljöteknik/Yrkes- och miljömedicin.

Peer reviewed articles

1994

1. Dalene M, Skarping G and Tinnerberg H. Biological monitoring of hexamethylene diisocyanate by determination of 1,6- hexamethylene diamine as the trifluoroethyl chloroformate derivative using capillary gas chromatography with thermoionic and selective-ion monitoring. J Chromatogr B 656 (1994) 319-328.
2. Dalene M, Skarping G and Tinnerberg H. Thermospray mass spectrometry of aliphatic diamines derivatized with trifluoro- ethyl chloroformate, with special reference to the biological monitoring of hexamethylene diisocyanate (HDI) and isophorone diisocyanate (IPDI). Chromatographia Vol 38 11/12 (1994) 776-780.
3. Skarping G, Dalene M and Tinnerberg H. Biological monitoring of hexamethylene- and isophorone-diisocyanate by the determination of hexamethylene- and isophorone-diamine in hydrolysed urine using liquid chromatography and mass spectrometry. Analyst (1994) 119 2051-2055.

1995

4. Tinnerberg H., Skarping G, Dalene M and Hagmar L. Test chamber exposure of humans to 1,6-hexamethylene diisocyanate (HDI) and isophorone diisocyanate (IPDI). Int Arch Occup Environ Health (1995) 67 367-374.

1996

5. Spanne M, Tinnerberg H., Dalene M and Skarping G. Determination of complex mixture of airborne isocyanates and amines. I. liquid chromatography with UV detection of monomeric and polymeric isocyanates as their di-n-butylamine derivatives. Analyst (1996) 121 1095-1099.
6. Tinnerberg H., Spanne M, Dalene M and Skarping G. Determination of complex mixture of airborne isocyanates and amines. II. Toluene -diisocyanate, -aminoisocyanate, and -diamine after thermal degradation of a TDI-polyurethane. Analyst (1996) 121 1101-1106.

1997

7. Tinnerberg H., Spanne M, Dalene M and Skarping G. Determination of complex mixture of airborne isocyanates and amines. III. Methylene -diphenyldiisocyanate, -aminoisocyanate, and -diamine and structural analogs after thermal degradation of a MDI-polyurethane. Analyst (1997) 122 275-278.
8. Tinnerberg H., Dalene M and Skarping G. Air and biological monitoring of toluene diisocyanate (TDI) in a flexible foam plant. Am Ind Hyg Assoc J (1997) 58 229-235.
9. Lind P, Dalene M, Tinnerberg H., Skarping G. Biomarkers in hydrolysed urine, plasma and erythrocytes among workers exposed to thermal degradation products from toluene diisocyanate foam. Analyst (1997) 122 51-56.

10. Tinnerberg H, Karlsson D, Dalene M and Skarping G. Determination of toluene diisocyanate in air using di-n-butylamine and 9-N-methyl-aminomethyl-anthracene as derivatisation reagents. *J Liq Chrom & Rel Technol* (1997) 20 (14) 2207-2219.

1998

11. Hagmar L, Bonassi S, Strömberg U, Mikoczy Z, Lando C, Hansteen I-L, Montagud A H, Knudsen L, Norppa H, Reuterwall C, Tinnerberg H, and other members of the European Study Group on Cytogenetic Biomarkers and Health (ESCH). Cancer predictive value of cytogenetic markers used in occupational health surveillance programs. In: Schwab et al (Eds.) *Genes and Environment in Cancer. Recent Results in Cancer Research* (1998) 154 177-184.

12. Hagmar L, Bonassi S, Strömberg U, Mikoczy Z, Lando C, Hansteen I-L, Montagud A H, Knudsen L, Norppa H, Reuterwall C, Tinnerberg H, Brøgger A, Forni A, Högstedt B, Lambert B, Mitelman F, Nordenson I, Salomaa S and Skerfving S. Cancer predictive value of cytogenetic markers used in occupational health surveillance programs: a report from an ongoing study by the European Study Group on Cytogenetic Biomarkers and Health. *Mutation Research* (1998) 405 171-178.

2000

13. Bonassi S, Hagmar L, Strömberg U, Montagud A H, Tinnerberg H, Forni A, Heikkilä P, Wanders S, Wilhardt P, Hansteen I-L, Knudsen L, Norppa H and the European Study Group on Cytogenetic Biomarkers and Health (ESCH). Chromosomal aberrations in lymphocytes predict human cancer independently of exposure to carcinogens. *Cancer Research* (2000) 60 1619-1625.

14. Albin M, Björk J, Welinder H, Tinnerberg H, Mauritzson N, Johansson B, Billström R, Strömberg U, Mikoczy Z, Ahlgren T, Nilsson P-G, Mitelman F, and Hagmar L. Acute myeloid leukemia and clonal chromosome aberrations in relation to past exposure to organic solvents. *Scandinavian Journal of Work, Environment and Health* (2000) 26 482-491.

2001

15. Hagmar L, Strömberg U, Tinnerberg H, and Mikoczy Z. The usefulness of cytogenetic biomarkers as intermediate endpoints in carcinogenesis. *International Journal of Hygiene Environment and Health* (2001) 204 43-47.

16. Björk J, Albin M, Welinder H, Tinnerberg H, Mauritzson N, Kauppinen T, Strömberg U, Johansson B, Billström R, Mikoczy Z, Ahlgren T, Nilsson P-G, Mitelman F, and Hagmar L. Are occupational, hobby, or lifestyle exposures associated with Philadelphia chromosome-positive chronic myeloid leukemia? *Occupational and Environmental Medicine* (2001) 58 722-727.

17. Tinnerberg H, Björk J and Welinder H. Evaluation of occupational and leisure time exposure assessment in a population-based case control study on leukaemia. *International Archives of Occupational and Environmental Health* (2001) 74:533-540.

2003

18. Tinnerberg H, Heikkilä P, Huici-Montagud A, Bernal F, Forni A, Wanders S, Welinder H, Wilhardt P, Strömberg U, Norppa H, Knudsen L, Bonassi S, Hagmar L. Retrospective exposure assessment and quality control in an international multicentre case control study. *Annals of Occupational Hygiene* (2003) 47:37-47.

19. Sennbro C J, Lindh C, Tinnerberg H, Gustavsson C, Littorin M, Welinder H, Jönsson B A G. Development, validation and characterisation of an analytical method for quantification of hydrolysable urinary metabolites and plasma protein adducts of 2,4- and 2,6-toluene diisocyanate, 1,5-naphthalene diisocyanate and 4,4'-methylenediphenyl diisocyanate. *Biomarkers* (2003) 8:204-217.

20. Albin M, Björk J, Welinder H, Tinnerberg H, Mauritzson N, Billström R, Strömberg U, Mikoczy Z, Johansson B, Ahlgren T, Nilsson P-G, Mitelman F, and Hagmar L. Cytogenetic and morphologic subgroups of myelodysplastic syndromes in relation to occupational and hobby exposures. *Scand Journal of Work and Environmental Health* (2003) 29:378-387.

2004

21. Mikoczy Z, Welinder H, Tinnerberg H, Hagmar L. Cancer incidence and mortality in isocyanate exposed workers from the Swedish polyurethane foam industry. *Occupational and Environmental Medicine* (2004) 61:432-437.

22. Sennbro C J, Lindh C H, Welinder H, Jönsson BAG and Tinnerberg H. A survey of air exposure to isocyanates in thirteen Swedish polyurethane industries. *Annals of occupational hygiene* (2004) 48:405-414.

23. Sennbro C J, Lindh C H, Welinder H, Ekman J, Östin A, Jönsson BAG and Tinnerberg H. Determination of isocyanates in air using 2-(1-methoxyphenyl)piperazine impregnated filters; long-term sampling performance and field comparison with impingers with dibutylamine. *Annals of occupational hygiene* (2004) 48:415-424.

24. Sennbro C J, Lindh C, Tinnerberg H, Welinder H, Littorin M, Jönsson BAG. Biological monitoring of exposure to toluene diisocyanate. *Scand J Work Environ Health* (2004) 30:371-378.

2005

25. Sennbro C J, Littorin M, Tinnerberg H, and Jönsson BAG. Biological reference values for biomarkers of exposure to aromatic diisocyanates. *International Archives of Occupational and Environmental Health* (2005) 78:541-546.

26. Johansen K, Tinnerberg H, Lynge E. Use of history science methods in exposure assessment for occupational health studies. *Occup Environ Med* (2005) 62:434-441.

2006

27. Lynge E, Andersen A, Rylander L, Tinnerberg H, Lindbohm ML, Pukkala E, Jensen P, Clausen LB, Johansen K. Cancer in persons working in dry cleaning in the nordic countries. *Environ Health Persp* (2006) 114:213-219.

28. Sennbro CJ, Lindh C, Mattsson C, Jönsson BAG, Tinnerberg H. Biological monitoring of exposure to 1,5-naphthalene diisocyanate and 4,4'-methylenediphenyl diisocyanate. *International Archives of Occupational and Environmental Health* (2006) 79:647-653.

2007

29. Littorin M, Broberg K, Axmon A, Sennbro CJ, Tinnerberg H. Eyes and airways symptoms at low occupational exposure to toluene diisocyanate. *Scand J Work Environ Health* (2007) 33:280-285.

2008

30. Tinnerberg H, Mattsson C. Usage of biomarkers of isocyanate exposure to assess the effect of a control intervention. *Annals of Occupational Hygiene* (2008) 52:187-194.

31. Mattsson C, Lindh C, Tinnerberg H. Underestimation of toluene diisocyanate concentration using long-term sampling with 1-(2-methoxyphenyl) piperazine impregnated filters. *International Journal of Hygiene and Environmental Health* (2008) 211:458-462.

32. Hedmer M, Tinnerberg H, Axmon A, Jönsson BAG. Environmental and biological monitoring of antineoplastic drugs in four workplaces in a Swedish hospital. *International Archives of Occupational and Environmental Health* (2008) 81:899-911.

33. Tinnerberg H, Sennbro CJ, Jönsson BAG. Aniline in hydrolysed urine and plasma –possible biomarkers for phenylisocyanate exposure. *Journal of Occupational and Environmental Hygiene* (2008) 5:629-632.

34. Broberg K, Tinnerberg H, Axmon A, Warholm M, Rannug A, Littorin M. Influence of genetic factors on Toluene diisocyanate-related symptoms. *Environmental Health* (2008) 7:15.

2010

35. Broberg K, Littorin M, Axmon A, Jönsson BAG, Sennbro CJ, Tinnerberg H, Warholm M, Rannug A. The *GSTP1* Ile105Val polymorphism modifies the metabolism of toluene diisocyanate (TDI) *Pharmacogenetics and genomics* (2010) 20:104-11.

2011

36. Malmqvist E, Rignell-Hydbom A, Tinnerberg H, Björk J, Stroh E, Jakobsson K, Rittner R, Rylander L. Maternal exposure to air pollution and birth outcome. *Environmental Health Perspective* (2011) 119:553-558.

37. Lynge E, Tinnerberg H, Rylander L, Romundstad P, Johansen K, Lindbohm ML, Heikkilä P, Westberg H, Clausen LB, Piombino A, Thorsted BL. Exposure to tetrachloroethylene in dry cleaning

shops in the Nordic countries. *Annals of Occupational Hygiene* (2011) 55:387396.

38. Kammer R, Eriksson K, Tinnerberg H. Development and Evaluation of a Tape-Stripping Technique for Measuring Dermal Exposure to Pyrene and Benzo(a)pyrene. *Journal of Environmental Monitoring* (2011) 13 (8) 2165-2171.

39. Mikoczy Z, Tinnerberg H, Björk J, Albin M. Cancer incidence and mortality in Swedish sterilant workers exposed to ethylene oxide: updated cohort study findings 1972-2006. *International Journal of Environmental Research and Public Health* (2011) 8:2009-2019.

2012

40. Hamada H, Isaksson M, Bruze M, Engfeldt M, Liljelind I, Axelsson S, Jönsson BAG, Tinnerberg H, Zimerson E. Dermal uptake study with 4,4'-diphenylmethane diisocyanate led to active sensitization. *Contact Dermatitis* (2012) 66:101-105.

41. Stroh E, Rittner R, Oudin A, Ardö J, Jakobsson K, Björk J, Tinnerberg H. Measured and modeled personal and environmental NO₂ exposure. *Population Health Metrics* (2012) 10:10.

2013

42. Malmqvist E, Jakobsson K, Tinnerberg H, Rignell-Hydbom A, Rylander L. Gestational diabetes and preeclampsia is associated with air pollution at levels below current air quality guidelines. *Environmental Health Perspective* (2013) 121:488-493.

43. Hogstedt C, Jansson C, Hugosson M, Tinnerberg H, Gustavsson P. Cancer incidence in a cohort of Swedish chimney sweeps 1958-2006. *American Journal of Public Health* (2013) 103(9):1700-1707.

44. P.T. Nilsson, C. Isaxon, A.C. Eriksson, M.E. Messing, L. Ludvigsson, J Rissler, M. Hedmer, H. Tinnerberg, A. Gudmundsson, K. Deppert, M. Bohgard and J. Pagels. Nano-objects emitted during maintenance of common particle generators: direct chemical characterization with aerosol mass spectrometry and implications for risk assessments. *Journal of nanoparticle research* (2013) 15:2052.

2014

45. Rylander L, Rignell-Hydbom A, Tinnerberg H, Jönsson B. Trends in human concentrations of endocrine disruptors – possible reasons and consequences. *Journal of Epidemiology and Community Health* (2014) 68:4-5.

46. M. Hedmer, C. Isaxon, P. Nilsson, L. Ludvigsson, M. E. Messing, J. Genberg, V. Skaug, M. Bohgard, H. Tinnerberg and J. Pagels. Exposure and Emission Measurements during Production, Purification and Functionalization of Arc-Discharge Produced Multi-walled Carbon Nanotubes. *Annals of Occupational Hygiene* (2014) 58 (3) 355-379

47. Tinnerberg H, Lindh C, Broberg K, Jönsson BAG. Biomarkers of exposure in Monday morning urine samples as a long term measure of isocyanate exposure. *International Archives of Occupational and Environmental Health* (2014) 87: 365-372.

48. Hedmer M, Karlsson J-E, Andersson U, Jacobsson H, Nielsen Jörn and Tinnerberg H. Exposure to respirable dust and manganese prevalence of airways symptoms among Swedish mild steel welders in the manufacturing industry. *International Archives of Occupational and Environmental Health* (2014) 87:623-634.

49. Hagenbjörk-Gustafsson A, Tornevi A, Andersson E M, Johannesson S, Bellander T, Merritt A-S, Tinnerberg H, Westberg H, Forsberg B, Sallsten G. Determinants of personal exposure to some carcinogenic substances and nitrogen dioxide among the general population in five Swedish cities. *Journal of Exposure Science and Environmental Epidemiology* (2014) 24: 437-443

50. Malmqvist E, Olsson D, Hagenbjörk-Gustafsson A, Forsberg B, Mattisson K, Stroh E, Strömberg M, Swietlicki E, Rylander L, Hoek G, Tinnerberg H, Modig L. Assessing ozone exposure for long term epidemiological studies. *Atmospheric Environment* (2014) 94: 241-248.

2015

51. Jönsson L, Tinnerberg H, Jacobsson H, Andersson U, Axmon A, Nielsen J. The ordinary work environment increase symptoms from eyes and airways in mild steel welders. *Int Arch Occup Environ Health* (2015) 88:1131-1140

52. Landberg H, Berg P, Andersson L, Bergendorf U, Karlsson J-E, Westberg H, Tinnerberg H. Comparison and evaluation of multiple users' usage of the exposure and risk tool: Stoffenmanager 5.1. *Annals of Occupational Hygiene* (2015) 59(7):821-835
53. Malmqvist E, Elding-Larsson H, Jönsson I, Rignell-Hydbom A, Ivarsson S-A, Tinnerberg H, Stroh E, Rittner R, Jakobsson K, Swietlicki E, Rylander L. Maternal exposure to air pollution and type-1 diabetes—accounting for genetic factors. *Environmental Research* (2015) 140:268-274.
54. Hedmer M, Ludvigsson L, Isaxon C, Nilsson P, Skaug V, Bohgard M, Messing ME, Pagels JH, Tinnerberg H. Detection of multi-walled carbon nanotubes and carbon nanodiscs on workplace surfaces at a small-scale producer. *Annals of Occupational Hygiene* (2015) 59(7): 836-852
55. J M Broström, Z-W Ye, A Axmon, H Tinnerberg, M Littorin, C H Lindh, H Zheng, U Stenius, B A G Jönsson, J Högberg Toluene diisocyanate: Induction of the autotaxin-lysophosphatidic acid axis and its association with airways symptoms *Toxicology and Applied Pharmacology* (2015) 287 (3) 222-231
56. Hossain MB, Li H, Hedmer M, Tinnerberg H, Albin M, Broberg K. Exposure to welding fume is associated with hypomethylation of the *F2RL3* gene – a cardiovascular disease marker. *Occup Environ Med* 2015 Dec;72(12):845-51.
57. Li H, Hedmer M, Kåredal M, Björk J, Stockfelt L, Tinnerberg H, Albin M, Broberg K. A cross-sectional study of the cardiovascular effects of welding fumes. *PLoS One*. 2015 Jul 6;10(7):
58. H Li, M Hedmer, T Wojdacz, M B Hossain, C Lindh, H Tinnerberg, M Albin, K Broberg. Oxidative stress, telomere shortening, and DNA methylation in relation to low-to-moderate occupational exposure to welding fumes. *Environmental Molecular Mutagenesis* 2015 Oct;56(8):684-93.
- 2016**
59. Ludvigsson L, Isaxon C, Nilsson P, Tinnerberg H, Messing ME, Rissler J, Skaug V, Gudmundsson A, Boghart M, Hedmer M, Pagels J. Carbon Nanotube Emissions from Arc Discharge Production: Classification of Particle Types with Electron Microscopy and Comparison with Direct Reading Techniques. *Annals of Occupational Hygiene* (2016) 60(4): 493-512
- 2017**
60. Alhamdow A, Gustavsson P, Rylander L, Jakobsson K, Tinnerberg H, Broberg K. Chimney sweeps in Sweden: a questionnaire-based assessment of long-term changes in work conditions, and current eye and airway symptoms. *Int Arch Occup Environ Health*. 2017 Feb;90(2):207-216)
61. Xu Y, Li H, Hedmer M, Hossain M B, Tinnerberg H, Broberg K, Albin M. Occupational exposure to particles and mitochondrial DNA – relevance for blood pressure? *Environmental Health* 2017 9;16(1):22..
62. Landberg H, Axmon A, Westberg H, Tinnerberg H. A study of the validity of two exposure assessment tools; Stoffenmanager and the Advanced REACH tool. *Annals of Work Exposure and Health* 2017 61(5) 575-588..
63. Hedmer M, Wierzbicka A, Li H, Albin M, Tinnerberg H, Broberg K. Diesel Exhaust Exposure Assessment Among Tunnel Construction Workers-Correlations Between Nitrogen Dioxide, Respirable Elemental Carbon, and Particle Number. *Annals of Work Exposure and Health* 2017 61(5) 539-553
64. Alhamdow A, Lindh C, Albin M, Gustavsson P, Tinnerberg H, Broberg K. Early markers of cardiovascular disease are associated with occupational exposure to polycyclic aromatic hydrocarbons. *Scientific reports* 2017 7(1): 9426
- 2018**
65. Hamada H, Liljelind I, Bruze M, Engfeldt M, Isaksson M, Jönsson BAG, Tinnerberg H, Lindh C, Axelsson S, Zimerson E. Assessment of dermal uptake of diphenylmethane-4,4'-diisocyanate using tape stripping and biological monitoring. *European Journal of Dermatology* 2018 28(2) 869-878
66. Nilsson P T, Bergendorf U, Tinnerberg H, Nordin E, Gustavsson M, Strandberg B, Albin M, Gudmundsson A. Emissions into the air from bitumen and rubber bitumen – Implications for asphalt workers' exposure. *Annals of Work Exposure and Health* 2018 13;62 (7) 828-839.
67. Xu Y, Kåredal M, Nielsen J, Bergendorf U, Strandberg B, Antonsson A-B, Tinnerberg H, Albin M. Exposure, respiratory symptoms, lung function and inflammation response of road paving asphalt workers. *Occupational and Environmental Medicine* 2018 75(7) 494-500

68. Alhamdow A, Lindh C, Hagberg J, Graff P, Westberg H, Krajs A M, Albin M, Gustavsson P, Tinnerberg H, Broberg K. DNA-methylation of the cancer-related genes *F2RL3* and *AHRR* is associated with occupational exposure to polycyclic aromatic hydrocarbons. *Carcinogenesis* 2018 39(7) 869-878.

69. Broström JM, Ghalali A, Zheng H, Högberg J, Stenius U, Littorin M, Tinnerberg H, Broberg K. Toluene diisocyanate exposure and autotaxin-lysophosphatidic acid signalling. *Toxicol Appl Pharmacol*. 2018 15 355:43-51.

70. Landberg H, Westberg H, Tinnerberg H. Evaluation of risk assessment approaches of occupational chemical exposures based on models in comparison with measurements *Safety Science*, 2018, 109, 412-420

2019

71. Landberg H, Hedmer M, Westberg H, Tinnerberg H. Evaluating the risk assessment approach of the REACH legislation using exposure models and calculated risk characterization ratios: A case study. *Annals of Work Exposure and Health* 2019 63(1) 68-76.

72. Alhamdow A, Tinnerberg H, Lindh C, Albin M, Broberg K. Cancer-related proteins in serum are altered in workers occupationally exposed to polycyclic aromatic hydrocarbons: a cross-sectional study. *Carcinogenesis* 2019 40(6) 771-781.

73. Johansson G, Tinnerberg H. Binding occupational exposure limits for carcinogens in the EU – good or bad? *Scand J Work Environ Health* 2019 45(3) 213-214.

74. Alhamdow A, Lindh C, Albin M, Gustavsson P, Tinnerberg H, Broberg K. Cardiovascular disease-related serum proteins in workers occupationally exposed to polycyclic aromatic hydrocarbons. *Toxicological Science* 2019 June 22.

75. Wahlberg K, Rietz Liljedahl E, Alhamdow A, Lindh C, Lidén C, Albin M, Tinnerberg H, Broberg K. Filaggrin variations are associated with PAH metabolites in urine and DNA alterations in blood. *Environmental Research Volume 177*, October 2019, 108600.

2020

76. Alhamdow A, Essig YJ, Krajs AM, Gustavsson P, Tinnerberg H, Lindh CH, Hagberg J, Graff P, Albin M, Broberg K. Fluorene exposure among PAH-exposed workers is associated with epigenetic markers related to lung cancer. *Occup Environ Med*. 2020 77(7):448-495

2021

77. Taj T, Gliga AR, Hedmer M, Wahlberg K, Assarsson E, Lundh T, Tinnerberg H, Albin M, Broberg K. Effect of welding fumes on the cardiovascular system: a six-year longitudinal study. *Scand J Work Environ Health* 2021 1;47(1):52-61

2022

78. Runström Eden G, Tinnerberg H, Rosell L, Möller R, Almstrand AC, Bredberg A. Exploring methods for surveillance of occupational exposure from additive manufacturing in four different industrial facilities. *Annals of work exposure and health*. 2022 66 (2);163

79. Sjögren B, Albin M, Broberg K, Gustavsson P, Tinnerberg H, Johansson G. An occupational exposure limit for welding fume is urgently needed. *Scandinavian Journal of Work Environment and Health*. 2022 48(1):1-3

80. Ljungkvist G, Tinnerberg H, Löndahl J, Klang T, Viklund E, Kim J-L, Schiöler L, Forsgard N, Olin A-C. Exploring a new method for the assessment of metal exposure by analysis of exhaled breath of welders. *International Archives of Occupational and Environmental Health*. 2022 95(6);1255-1265

81. Gustavsson P, Wiebert P, Tinnerberg H, Bodin T, Linnarsjö A, Hed Myrberg I, Albin M, Selander J. Time trends in occupational exposure to chemicals in Sweden: proportion exposed, distribution

across demographic and labour market strata, and exposure levels. *Scandinavian Journal of Work Environment and Health* 2022 48(6); 479-489.

2023

82. Almstrand AC, Bredberg A, Runström Eden G, Karlsson H, Assenhøj M, Koca H, Olina AC, Tinnerberg H. An explorative study on respiratory health among operators working in polymer additive manufacturing. *Frontiers in public health* 11:1148974 (2023).

Manuscripts

Storsjö T, Sun J, Farbrot A, Tinnerberg H. Development of a method for exposure assessment of material in the graphene family. Submission to “Carbon” in August.

Klang T, Molnar P, Tinnerberg H. A protocol for self-assessment for chimney sweeps exposure to soot and PAH and quantitative descriptions of work tasks. Submission to “Annals of work exposure and health” in August.