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Robotic reconstitution of cytostatic drugs and monoclonal antibodies: transforming aseptic drug compounding in hospital pharmacies

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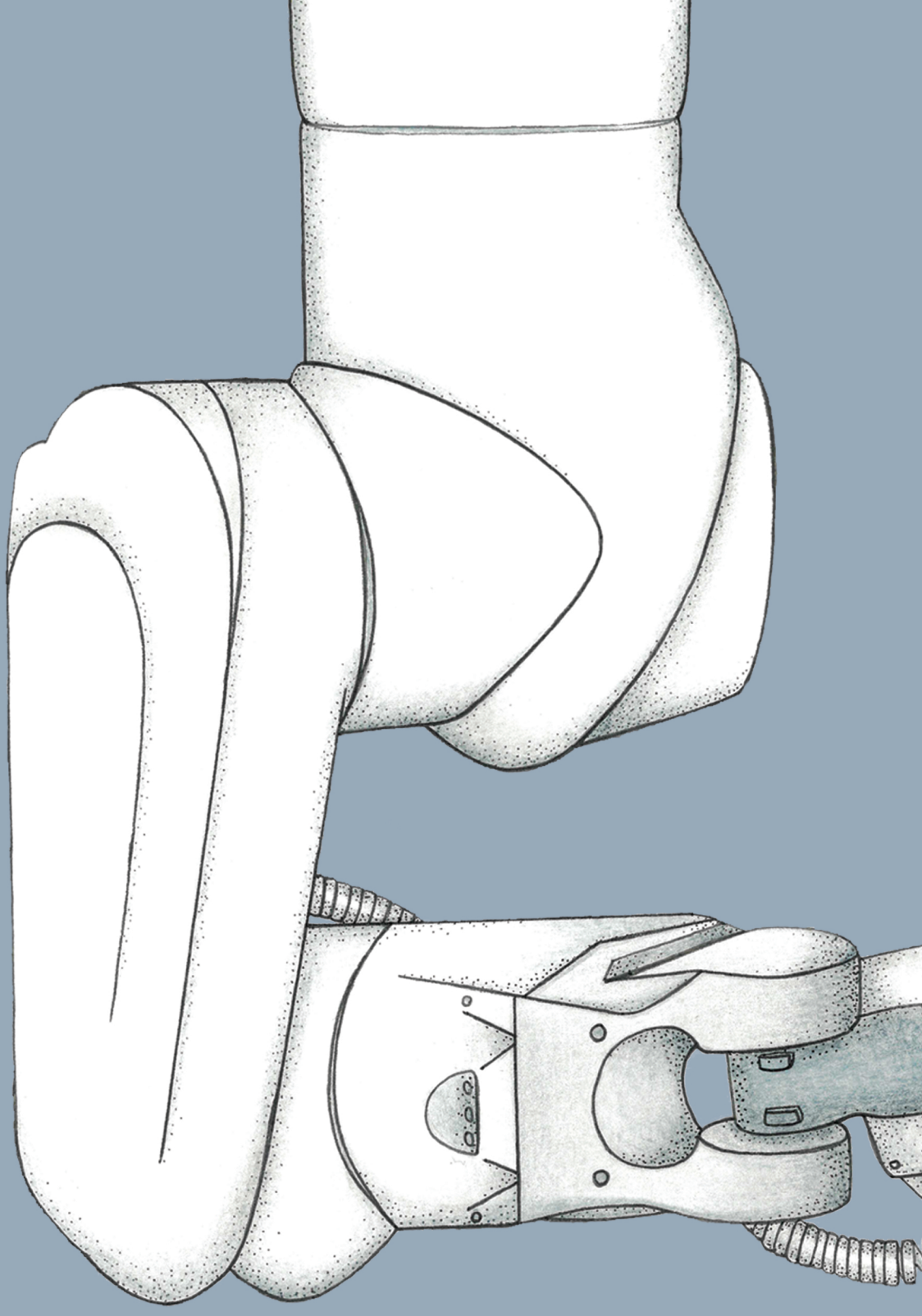
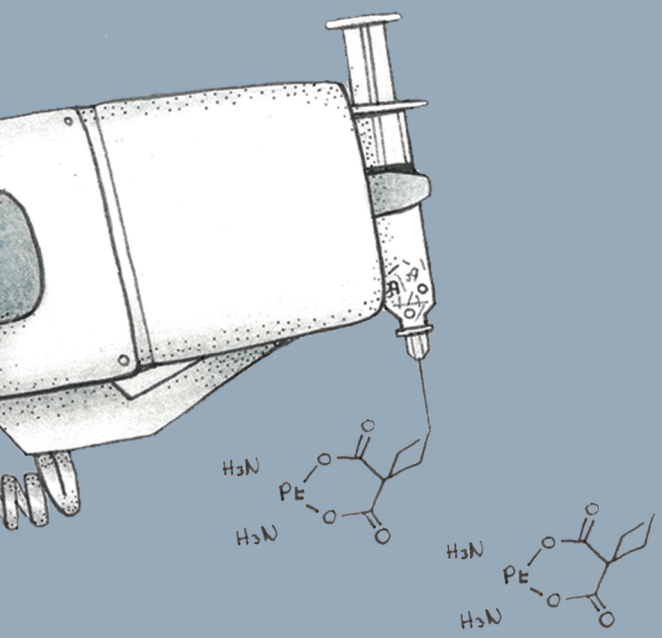


Section VI

Appendices



CURRICULUM VITAE

Tjerk Harmen Geersing was born in Hengelo, The Netherlands, in 1989. He earned a Bachelor's degree in Pharmacy from the University of Groningen (Rijksuniversiteit Groningen) in 2009, followed by a Master's degree in Pharmacy in 2013. Shortly after, he began his career as a pharmacist at the Laurentius Hospital in Roermond. In 2014, he joined Stichting Health Base, where he conducted research on hypersensitivity reactions following vaccination.

In 2016, Tjerk started working as a pharmacist at OLVG in Amsterdam, where he implemented and conducted research on a robotic compounding system under the supervision of Dr. Mirjam Crul. During his residency training in hospital pharmacy, completed at OLVG and Amsterdam UMC, he continued his research into robotic reconstitution. Additionally, he pursued specializations in infectious diseases and medical leadership and conducted a study on continuous amphotericin B infusion in critically ill patients.

In 2021, Tjerk initiated a collaboration with the Leiden Academic Center for Drug Research (LACDR) in Leiden. That same year he officially began his PhD research at LACDR under the supervision of Dr. Mirjam Crul, Dr. Eric Franssen, the late Prof. Dr. Wim Jiskoot, and later Prof. Dr. Catherijne Knibbe. Concurrently, he started working as a hospital pharmacist at the St. Antonius Hospital in Nieuwegein. His doctoral research focused on evaluating the advantages of robotic reconstitution of cytostatic drugs and monoclonal antibodies compared to manual reconstitution methods.

Tjerk's passion for automation and innovation remained evident at the St. Antonius Hospital, where he integrated the center into his PhD research and successfully implemented a robotic compounding system in 2024.

LIST OF PUBLICATIONS

Geersing TH, Klous MG, Franssen EJF, van den Heuvel JJG, Crul M. Robotic compounding versus manual compounding of chemotherapy: Comparing dosing accuracy and precision. Eur J Pharm Sci 2020; 155: 105536.

Geersing TH, Dogan D, Nejadnik MR, Romeijn S, Knibbe CAJ, Crul M. Aggregate Formation and Antibody Stability in Infusion Bags: The Impact of Manual and Robotic Compounding of Monoclonal Antibodies. J Pharm Sci 2024; 113(4): 1029-37.

Geersing TH, Franssen EJF, Pilesi F, Crul M. Microbiological performance of a robotic system for aseptic compounding of cytostatic drugs. Eur J Pharm Sci 2019; 130: 181-5.

Geersing TH, Pourahmad DM, Lodewijk F, Franssen EJF, Knibbe CAJ, Crul M. Analysis of production time and capacity for manual and robotic compounding scenarios for parenteral hazardous drugs. Eur J Hosp Pharm 2024; 31(4): 352-7.

Baan SD*, **Geersing TH***, Crul M, Franssen EJF, Klous MG. An economic evaluation of vial sharing of expensive drugs in automated compounding. Int J Clin Pharm 2022; 44(3): 673-9.

Werumeus Buning A, **Geersing TH**, Crul M. The assessment of environmental and external cross-contamination in preparing ready-to-administer cytotoxic drugs: a comparison between a robotic system and conventional manual production. Int J Pharm Pract 2020; 28(1): 66-74.

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I am deeply thankful to my colleagues at St. Antonius Hospital, who created the space for me to complete my research by taking over some of my responsibilities. Anne-Fleur, thank you for the beautiful illustration you created for the cover of this dissertation. I would also like to thank my colleagues at OLVG and Amsterdam UMC for their encouragement, involvement, and collegiality.

To my family and friends, thank you for all the love and support you have given me in recent years. Marije, my dear wife, my sincere gratitude for your unconditional support and love. And to our children, Tessie, Ivo, and Luuk: you are my greatest inspiration. I hope you always remember that with passion and determination, anything is possible.