



Exponent®
Engineering & Scientific Consulting

Teri Hermel-Davidock, Ph.D.

Principal Scientist | Biomedical Engineering and Sciences
Philadelphia
+1-215-594-8877 | thermel-davidock@exponent.com

Professional Profile

Dr. Hermel-Davidock has led global medical device engineering and R&D organizations, with full ownership of the product lifecycle, using technology innovation, modernized manufacturing systems, and engineering excellence to guide complex medical devices from concept through global scale with sustained long-term quality and performance.

She has extensive experience in leading Class II/III medical devices, drug/pharma combination products, and diagnostic platforms through development, global launch, rapid scale-up, and sustained lifecycle excellence. Her product expertise includes continuous glucose monitoring systems, diagnostics, infusion and drug delivery technologies. This is supported by her deep expertise in polymer systems and advanced materials, device-drug interactions, extractables/leachables, sterilization strategies, regulatory compliance, and performance-monitoring systems. She has held executive leadership roles through FDA audits, 483 observations, Warning Letter remediation, and global compliance programs, aligning technology, quality, and regulatory execution with business strategy.

She has served in executive leadership roles across the continuous glucose monitoring (CGM), core diagnostics, drug delivery, and infusion systems industries, addressing challenges including manufacturing scale-up for high-volume production, FDA Warning Letter remediation, product reliability and yield improvement, and lifecycle management for regulated combination products. Her experience spans device-drug interactions, extractables and leachables, sterilization validation, and aseptic and sterile manufacturing environments.

Dr. Hermel-Davidock's approach integrates Design for Excellence (DfX), Industry 4.0 modernization, digital performance systems, and predictive analytics to optimize quality, yield, and process capability at scale. She brings deep technical expertise as a materials science subject matter expert (SME) for regulatory submissions, FDA and CE Mark compliance, and post-market actions including 483 observations and Warning Letter remediation.

Previously, Dr. Hermel-Davidock served as Vice President of Global Engineering Operations at Dexcom, where she directed a nearly 200-person global engineering organization and led manufacturing capacity expansion that supported 25% shipment growth and entry into 24 new markets. Prior to Dexcom, she held senior engineering and R&D leadership roles at Abbott Laboratories and Becton, Dickinson and Company, and early in her career conducted advanced polymer and materials research at Dow Chemical Company.

She earned her PhD in Materials Science and Engineering from the University of Minnesota and her BS in Materials Engineering from New Mexico Institute of Mining and Technology. She has an Executive Scholar Certification in General Management from the Kellogg School of Management, attended the Stanford Biodesign Executive Training, and holds a Six Sigma Green Belt certification.

Dr. Hermel-Davidock is a named inventor on 25+ U.S. and international patents spanning medical devices, advanced materials, polymer science, antimicrobial technologies, and catheter systems. She is an invited speaker at international industry, regulatory, and executive forums, and has been widely recognized for thought leadership in advanced materials, medical device innovation, sustainability, and global medtech manufacturing modernization. She serves on the Academic Advisory Board of the Materials Science and Engineering Department at Johns Hopkins University and previously chaired the MedTech Europe Circular Economy Working Group.

Academic Credentials & Professional Honors

Ph.D., Materials Science and Engineering, University of Minnesota, 2003

B.S., Materials Engineering, New Mexico Inst. of Mining and Technology, 1997

Prior Experience

Vice President, Global Engineering Operations, Dexcom, San Diego, CA, 2023–2026

Senior Director, Division Engineering Core Diagnostics, Abbott Laboratories, Lake Forest, IL, 2018–2023

Director, Core Technologies, Worldwide R&D Medication & Procedural Solutions, Becton, Dickinson and Company, Franklin Lakes, NJ, 2015–2018

Senior Technology Manager, Advanced Materials, Worldwide R&D, Becton, Dickinson and Company, Franklin Lakes, NJ, 2013–2015

Technology Manager / Staff Engineer, Infusion & Packaging and Core Technology R&D, Becton, Dickinson and Company, Franklin Lakes, NJ, 2010–2013

Research Specialist / Senior Research Engineer, Dow Chemical Company, Freeport, TX, 2003–2009

Research Assistant, Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN, 1997–2003

Professional Affiliations

MedtechWOMEN — Member, 2026–Present

MedTech Europe, Circular Economy Working Group — Chair, 2021–2023

CHIEF Executive Women's Network — Member, 2023

Abbott Engineering Executive Council — Member, 2018–2022

Patents

US-9,000,094, Thermoforming, scratch-resistant, low gloss compositions comprising interpolymers of ethylene/ α -olefins

EP-2788424B1, Ethylene-based polymer compositions and films made therefrom

AU-2020223763-B2, Catheter tubing, 2021

US-10995175-B2, Thermoplastic polyurethane materials, 2021

US-10995299-B2, Self-lubricating polymer composition, 2021

EP-3515974-B1, Breathable films with microbial barrier properties, 2020

EP-3515515-B1, Enhancing bond strength of medical devices, 2020

US-10814040-B2, Laser markable medical devices, 2020

US-10806829-B2, Antimicrobial medical devices, 2020

EP-3515512-B1, Improving the binding strength of medical devices, 2020

EP-2147047-B1, Scratch-resistant, matte thermoforming compositions with ethylene/olefin interpolymers, 2019

EP-2344583-B1, Polymer blending with ethylene/alpha-olefin interpolymers, 2019

US-9150674-B2, US-9714309-B2, US-10654979-B2, AU-2017232223-B2, AU-2013305728-B2, Amphiphilic graft copolymers, 2015, 2017, 2019, 2020

US-9006380-B2, Thermoforming, scratch-resistant, low gloss compositions, 2015

US-9056970-B2, EP-2384351-B1, High-density polyethylene compositions, 2015, 2017

EP-2571690-B1, Composition suitable for stretch coating, 2014

US-8921491-B2, Polymer blends with ethylene/alpha-olefin interpolymers, 2014

US-8372931-B2, US-8729200-B2, US-8829115-B2, EP-2542621-B1, Ethylene-based polymer compositions, 2013, 2014, 2020

US-8173232-B2, Stretch hood films, 2012 | US-8389086-B2, Composition for stretch hood, 2013

US-8580388-B2, Composition suitable for stretch hood, 2013

Publications

Peer-Reviewed Journal Articles

Landes, B. G., Kern, B. J., Hermel-Davidock, T., & Weigand, S. J. (2016). In-situ and time-resolved small-angle X-ray scattering of polyolefin materials under deformation. *Powder Diffraction*, 31(2), 154–160.

Hermel-Davidock, T., "[Plastics Market Watch: Healthcare and Medical Devices](#)," 2015.

Hermel-Davidock, T., Cong, R. J., & Demirors, M. (2010). "[Deconvolution of Chemical Composition Distribution for Polyolefins](#)," Research Gate, 2010.

Hermel-Davidock, T., "D-94 Invited — In-Situ and Time Resolved Small-Angle X-ray Scattering," Research Gate, 2010.

Hermel-Davidock, T., "New Higher Impact Efficiency Elastomers for High Performance Rigid TPOs," Research Gate, 2010.

Tang, H. S., Hermel-Davidock, T., Hahn, S. F., & Yee, A. F. (2009). Microdeformation behavior in nanotemplated epoxy thermosets: A study with in situ tensile deformation technique in transmission electron microscopy. *Journal of Polymer Science Part B: Polymer Physics*, 47(1), 108–118.

Hermel-Davidock, T., Lee, H.-J., Sun, C., & Bates, F. S. (2007). "[Thermal Stress Hysteresis and Stress Relaxation in an Epoxy Film](#)," *Journal of Material Sciences*, 2007.

Hermel-Davidock, T., Tang, H. S., Murray, D. J., & Hahn, S. F. (2007). "[Control of the block copolymer morphology in templated epoxy thermosets](#)," *Journal of Polymer Science Part B: Polymer Physics*, 45(24), 3338–3348.

Hermel-Davidock, T., et al. (2003). Structure-Property Relationships in Block Copolymer Modified Epoxy Resins with Novel Morphologies. Ph.D. Dissertation, University of Minnesota.

Hermel, T. J., Wu, L., Hahn, S. F., Lodge, T. P., & Bates, F. S. (2002). "[Shear-Induced Lamellae Alignment in Matched Triblock and Pentablock Copolymers](#)," *Macromolecules*, 2002.

Conference Proceedings & Industry Papers

HCLTech Feminspiration, 2023

PPTA Business Forum, 2022

Plastics Leadership Summit NPE, 2018

Better Medical Plastics Needed, Global Plastics Summit, 2015

IPrime Impact, University of Minnesota, 2015

New Technology Forum, SPE ANTEC, 2013

Diskin, M., & Hermel-Davidock, T. (2012). The effect of polybutylene on seal strength of EVA/polybutylene seal blends in medical device packaging. Society of Plastics Engineers (SPE) ANTEC Proceedings.

Jin, Y., Hermel-Davidock, T., Karjala, T., Demirors, M., Wang, J., Leyva, E., & Demir, D. (2012). Shrink force measurement of low shrink force films. Society of Plastics Engineers (SPE) ANTEC Proceedings.

Walton, K. L., Berard, M., & Hermel-Davidock, T. (2010). New higher impact efficiency elastomers for high performance rigid TPOs. Society of Plastics Engineers (SPE) Automotive TPO Conference.

Krabbenborg, F., Hermel-Davidock, T., & Seliskar, J. (2008). Relationship between surface microstructure and improved scratch whitening resistance of thermoplastic polyolefins for automotive applications. SPE Automotive TPO Conference Proceedings.

Project Experience

Continuous Glucose Monitoring (CGM) & Wearable Medical Devices

- Directed a global engineering organization of nearly 200 professionals across North America, Europe, and Asia; oversaw a \$150M+ operating budget to drive manufacturing technology, automation, and NPI execution, enabling successful global CGM portfolio expansion.

- Scaled manufacturing capacity across internal sites and external suppliers; strengthened process controls to support 25% shipment growth from 2024 to 2025 and entry into 24 new international markets.
- Delivered significant improvements in incoming material controls, sensor manufacturing controls, and advanced test systems; strengthened product reliability and accuracy to support the successful launch of a next-generation 15-day CGM platform.
- Led engineering teams through FDA 483 observations and Warning Letter remediation; established enhanced controls and test infrastructure to improve compliance and manufacturing reliability at scale.
- Spearheaded enterprise-wide Industry 4.0 modernization across internal sites and strategic suppliers; implemented advanced data monitoring and proactive process management to improve quality and operational performance.

Core Diagnostics & Reagent Manufacturing

- Led a global technical organization of 90+ associates with a \$20M+ annual budget; directed network capacity expansion and end-to-end lifecycle management for consumable and reagent manufacturing supporting a \$4.9B diagnostics portfolio.
- Directed global manufacturing capacity strategy and \$200M+ annual capital planning; enabled 20–30% CAGR growth while improving quality, margin performance, and long-term scalability across aseptic and sterile production environments.
- Managed global consumables supplier manufacturing from scale-up through stable on-market production; led COVID-era crisis response and continuity efforts that delivered uninterrupted supply to healthcare providers worldwide.
- Served as the enterprise Materials Science SME for device-drug interactions, extractables and leachables, sterilization strategies, and regulatory submissions; supported PMA platform compliance across FDA and global regulatory authorities.

Drug Delivery, Infusion Systems & Combination Products

- Led a global R&D organization of 65+ professionals across seven international sites; managed a \$100M+ annual R&D investment portfolio aligning technology roadmaps and innovation priorities with long-term business objectives.
- Provided technical and regulatory leadership across Class II/III and combination-product platforms; served as the enterprise SME for extractables and leachables, device-drug compatibility, and sterilization validation, including direct engagement with the China FDA.
- Strengthened global customer confidence through direct engagement with KOLs and clinical teams in PICU and NICU environments across North America and Europe; resolved complex quality and performance issues to ensure patient safety and business continuity.
- Supported senior R&D leadership during the CareFusion integration and C.R. Bard acquisition; ensured business continuity, product development execution, and realization of strategic synergy objectives.

Advanced Materials & Manufacturing Technology

- Developed enterprise-wide materials science strategies across global medical device portfolios; advanced product performance, manufacturing efficiency, lifecycle management, and cost optimization across multiple business units.
- Led corporate materials compliance initiatives addressing emerging regulatory requirements including SVHC, BPA, phthalates, and EO residuals; improved global risk management and regulatory readiness across international markets.
- Directed a global packaging material conversion program; generated \$1M in annual savings and led a film-composition conversion across 300+ product lines valued at \$200M annually.
- Established strategic collaborations with universities, industry organizations, and global technology partners; accelerated innovation and influenced materials-related industry standards across the medtech sector.

Enterprise Transformation & Organizational Development

- Built and transformed global engineering and R&D organizations through strong program governance, standardized processes, and development of technical leaders; improved cross-functional integration with R&D, Quality, Operations, and Supply Chain.
- Drove enterprise change management and organizational transformation across large, matrixed global organizations; delivered sustained improvements in execution rigor, accountability, and technical talent development across geographies.
- Advanced enterprise sustainability initiatives across global operations; led energy-efficiency improvements, waste-reduction programs, and responsible manufacturing practices, including serving as Chair of the MedTech Europe Circular Economy Working Group.

Additional Education & Training

Executive Scholar Certification — General Management, Kellogg School of Management, 2022

Executive Scholar Certification — Operation Strategy, Kellogg School of Management, 2022

Executive Scholar Certification — Executive Development, Kellogg School of Management, 2018

Six Sigma Green Belt Leader Certification, 2021

Abbott Operations Leadership Program, Abbott Laboratories, 2021

Stanford Biodesign Executive Education Training, Stanford University, 2015

BD Mid-Career Leadership Accelerator Program, Becton, Dickinson and Company, 2015

BD Global Marketing Powerhouse Training, Becton, Dickinson and Company, 2012

BD Leadership Development Program, Becton, Dickinson and Company, 2011

Babson Executive Education Leadership & Influence Training, Babson College, 2007

Advisory Appointments

Academic Advisory Board, Materials Science & Engineering Department, Johns Hopkins University,
2015–Present