



T +31 40 250 33 22  
m.pekar@vo.eu

# Martin Pekař

## Hightech & Electronics

*Trainee Patent Attorney*

Martin Pekař studied at the Czech Technical University in Prague where he accomplished two Master's degrees (MSc) in both Biomedical Engineering and Electrical Engineering. He achieved a PhD in Biomedical Engineering at the Erasmus University in Rotterdam. Between 2013 and 2022, he worked as a scientist and senior engineer at Philips. Since 2022, he started as a trainee patent attorney at V.O. Patents & Trademarks.

## Working experience

- Trainee Patent Attorney, V.O. (November 2022 – present)
- Senior Engineer, Philips Medical Systems (2021 – 2022)
- Scientist, Philips Research (2013 – 2021)
- Marie Skłodowska-Curie Fellow, Erasmus University (2013 – 2017)

## Education

- Masterclass in Artificial Intelligence, NCOI (2022 – 2023)
- Green Belt Design for Six Sigma Certification (2021 – 2022)
- PhD in Biomedical Engineering, Erasmus University (2013 – 2017)
- MSc in Electrical Engineering, Czech Technical University in Prague (2009 – 2013)
- MSc with honors in Biomedical Engineering, Czech Technical University in Prague (2009 – 2011)
- BSc with honors in Biomedical Engineering, Czech Technical University in Prague (2006 – 2009)

## Publications

- Stevens, T. S., Chennakeshava, N., de Bruijn, F. J., Pekař, M., & van Sloun, R. J. (2022, May). Accelerated Intravascular Ultrasound Imaging using Deep Reinforcement Learning. In ICASSP 2022-2022 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) (pp. 1216-1220). IEEE.
- Chennakeshava, N., Stevens, T. S., de Bruijn, F. J., Hancock, A., Pekař, M., Eldar, Y. C., ... & van Sloun, R. J. (2022, May). Deep Proximal Unfolding For Image Recovery from Under-Sampled Channel Data in Intravascular Ultrasound. In ICASSP 2022-2022 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) (pp. 1221-1225). IEEE.
- Pekař, M., Mihajlović, N., Belt, H., Kolen, A. F., Van Rens, J., Budzelaar, F., ... & van der Steen, A. F. (2018). Quantitative imaging performance of frequency-tunable capacitive micromachined ultrasonic transducer array designed for intracardiac application: Phantom study. *Ultrasonics*, 84, 421-429.
- Pekař, M. (2017). Agile and Bright Intracardiac Catheters. PhD thesis.
- Pekař, M., Kolen, A. F., Belt, H., van Heesch, F., Mihajlović, N., Hoefler, I. E., ... & van der Steen, A. F. (2017). Preclinical testing of frequency-tunable capacitive micromachined ultrasonic transducer probe prototypes. *Ultrasound in medicine & biology*, 43(9), 2079-2085.
- Pekař, M., van Nispen, S. H., Fey, R. H., Shulepov, S., Mihajlović, N., & Nijmeijer, H. (2017). A fluid-coupled

transmitting CMUT operated in collapse mode: Semi-analytic modeling and experiments. *Sensors and Actuators A: Physical*, 267, 474-484.

- Pekař, M., Dittmer, W. U., Mihajlović, N., van Soest, G., & de Jong, N. (2017). Frequency tuning of collapse-mode capacitive micromachined ultrasonic transducer. *Ultrasonics*, 74, 144-152.
- Pekař, M., Van Rens, J., & van der Mark, M. B. (2017). Electrifying catheters with light. *Optics Express*, 25(8), 8534-8549.
- Pekař, M., Mihajlović, N., Belt, H., Kolen, A. F., Jacobs, B., Bosch, J. G., ... & Rem-Bronneberg, D. (2016, September). Frequency-agility of collapse-mode 1-D CMUT array. In *2016 IEEE International Ultrasonics Symposium (IUS)* (pp. 1-3). IEEE.
- Van Der Mark, M. B., Van Dusschoten, A., & Pekař, M. (2015, March). All-optical power and data transfer in catheters using an efficient LED. In *Optical Fibers and Sensors for Medical Diagnostics and Treatment Applications XV* (Vol. 9317, pp. 45-56). SPIE.
- Pekař, M. (2013). Acoustic Radiation Force for Cardiac Ablation Monitoring. Master's thesis.
- Pekař, M. (2011). Diffusion model of CO2 in Avalanche. Master's thesis. Czech Technical University in Prague, the Czech Republic.
- Pekař, M. (2009). Video-Based Recording Set-Up for the Biomechanical Testing of Bone. Bachelor's thesis, University of Oulu, Finland.

## Patents

- Presura, Cristian N., Charvát, Jindřich, and Pekař, Martin. "Detecting distance of a probe to pulp of a tooth." International Patent Application no. WO2022128831A1, 23 Jun. 2022.
- Presura, Cristian N., Charvát, Jindřich, and Pekař, Martin. "Estimating the thickness of rigid material in a tooth." International Patent Application no. WO2022129134A1, 23 Jun. 2022
- Pekař, Martin, Rmaile, Amir, Gottenbos, Bart, and Presura, Cristian N. "System for providing oral tissue treatment." International Patent Application no. WO2022058268A1. 24 Mar. 2022.
- Pekař, Martin, Mihajlovic, Nenad, and van Rens. Cornelia A. "Intravascular ultrasound device." U.S. Patent Application No. 17/422,839.
- Mihajlovic, Nenad, Pekař, Martin, Dirksen, Peter, and Hope Simpson, David. "Ultrasound transducer array, device and system." International Patent Application no. WO2019038242A1. 28 Feb. 2019.
- Pekař, Martin, and Dittmer, Wendy. "An ultrasound system with a tissue type analyzer." International Patent Application no. WO2018077962A1.
- Pekař, Martin, and van der Mark, Martinus B. "Ultrasound system and method." U.S. Patent No. 10,674,999. 9 Jun. 2020.

## Professional & Community Activities

- Marie Curie Alumni Association (2017 – present)
- Reviewer at *Ultrasonics* journal (2016 – 2022)

## Languages

- English
- Dutch
- Czech