

Seznam použité literatury

- [1] J. Achenbach. *Wave Propagation in Elastic Solids, Volume 16 (North-Holland Series in Applied Mathematics and Mechanics)*. North Holland, nov 1987.
- [2] Continental Automotive. Fluid sensors. url: <https://www.continental-automotive.com/en-gl/passenger-cars/powertrain/diesel-technology/lubrication/fluid-sensors>.
- [3] J. Bladel, Midwestern Universities Research Association, U.S. Atomic Energy Commission. *On Helmholtz's Theorem in Finite Regions*. AEC research and development report. Midwestern Universities Research Association, 1958.
- [4] A. Cameron, K. Rome, W. A. Hing. Ultrasound evaluation of the abductor hallucis muscle: Reliability study. *Journal of Foot and Ankle Research*, 1(1):12, Sep 2008.
- [5] F. B. Cegla. Fluid characterization using the quasi-scholte mode. *AIP Conference Proceedings*. AIP, 2005.
- [6] F. B. Cegla. Measurement of bulk velocity and attenuation in fluids and particle suspensions using the quasi-scholte mode. *AIP Conference Proceedings*. AIP, 2006.
- [7] F. B. Cegla, P. Cawley, M. J. S. Lowe. Material property measurement using the quasi-scholte mode—a waveguide sensor. *The Journal of the Acoustical Society of America*, 117(3):1098–1107, March 2005.
- [8] CeramTec. Piezoelektrický princip, perovskit a polarizace. url: <https://www.ceramtec.cz/ceramic-materials/piezo-ceramics/basics>.
- [9] J. D. N. Cheeke. *Fundamentals and Applications of Ultrasonic Waves*. CRC Press, jun 2012.
- [10] M.O. Deighton, A.B. Gillespie, R.B. Pike, R.D. Watkins. Mode conversion of rayleigh and lamb waves to compression waves at a metal-liquid interface. *Ultrasonics*, 19(6):249–258, November 1981.
- [11] F. Ebrahimi. Piezoelectric actuators for functionally graded plates- nonlinear vibration analysis. *Piezoelectric Materials and Devices - Practice and Applications*. InTech, February 2013.
- [12] H. Faustmann, M. Münch, G. Lindner, M. Schmitt, M. Springer. Measurement of the properties of liquids based on the dispersion of lamb waves in an acoustic waveguide. *Physics Procedia*, 3(1):959–964, January 2010.
- [13] A.B. Gillespie, M.O. Deighton, R.B. Pike, R.D. Watkins. A new ultrasonic technique for the measurement of liquid level. *Ultrasonics*, 20(1):13–17, January 1982.
- [14] R. D. Gregory, I. Gladwell. The reflection of a symmetric rayleigh-lamb wave at the fixed or free edge of a plate. *Journal of Elasticity*, 13:185–206, 1983.

- [15] P. Guo, B. Deng, X. Lan, K. Zhang, H. Li, Z. Tian, H. Xu. Water level sensing in a steel vessel using a0 and quasi-scholte waves. *Journal of Sensors*, 2017:1–11, 2017.
- [16] D. V. Guzhavina, E. P. Gulin. Statistical characteristics of acoustic signals reflected from maritime vessels during continuous emission. *Acoustical Physics*, 59(4):422–430, July 2013.
- [17] H. Dobrinski, T. Eggers, J. Stürmann, M. Lindemann. D5.4 - mirco-sensors for automotive liquid properties monitoring. *AMA Service*, 2011.
- [18] HELLA. Generation 2 oil level sensors. url: <https://www.hella.com/mining/assets/media>.
- [19] R. Heyd. Resistive electrothermal sensors, mechanism of operation and modelling. *Heat Transfer Studies and Applications*. InTech, July 2015.
- [20] Y. S. Huang, Y. P. Huang, K. N. Huang, M. S. Young. An accurate air temperature measurement system based on an envelope pulsed ultrasonic time-of-flight technique. *Review of Scientific Instruments*, 78(11):115102, November 2007.
- [21] J. Rautenberg, F. Bause, B. Henning. A6.1 - guided acoustic waves for liquid property measurement. 2011.
- [22] H. Jeong, H. Shin, S. Zhang, X. Li, S. Cho. Application of fresnel zone plate focused beam to optimized sensor design for pulse-echo harmonic generation measurements. *Sensors*, 19(6):1373, March 2019.
- [23] N. R. Kesana, M. Parsi, R. E. Vieira, B. Azzopardi, E. Schleicher, B. S. McLaurry, S. A. Shirazi, U. Hampel. Visualization of gas-liquid multiphase pseudo-slug flow using wire-mesh sensor. *Journal of Natural Gas Science and Engineering*, 46:477–490, October 2017.
- [24] M. Kobayashi, Z. Sun, C.-K. Jen, K.-T. Wu, J. Bird, B. Galeote, N. Mrad. Engine oil condition monitoring using high temperature integrated ultrasonic transducers. *Volume 3: 30th Computers and Information in Engineering Conference, Parts A and B*. ASME, 2010.
- [25] T.G. Leighton, A.D. Phelps, D.G. Ramble, D.A. Sharpe. Comparison of the abilities of eight acoustic techniques to detect and size a single bubble. *Ultrasonics*, 34(6):661–667, August 1996.
- [26] P. Li, S. Chen, Y. Cai, J. Chen, J. Li. Accurate TOF measurement of ultrasonic signal echo from the liquid level based on a 2-d image processing method. *Neurocomputing*, 175:47–54, January 2016.
- [27] Z. Lu, C. Yang, D. Qin, Y. Luo, M. Momayez. Estimating ultrasonic time-of-flight through echo signal envelope and modified gauss newton method. *Measurement*, 94:355–363, December 2016.
- [28] M. Lenz, E. Kühnicke. A6.3 - sound velocity profiles in fluids for process monitoring. 2011.

- [29] J. A. Marbach, A. Almufleh, P. Di Santo, R. Jung, T. Simard, M. McInnes, J. P. Salameh, T. A. McGrath, S. J. Millington, G. Diemer, F. M. West, M. C. Domecq, B. Hibbert. Comparative Accuracy of Focused Cardiac Ultrasonography and Clinical Examination for Left Ventricular Dysfunction and Valvular Heart Disease: A Systematic Review and Meta-analysis Diagnostic Accuracy of FoCUS. *Annals of Internal Medicine*, 08 2019.
- [30] E. E. Mehmet, D. Gunes. Liquid level sensor in automotive design. *SENSORCOMM 2011 - The Fifth International Conference on Sensor Technologies and Applications*, 2011.
- [31] C. R. Moldovan, D. Perju, M. Şuta, M. Calisevici, M. Mirela, S. Marinescu. Modelling and simulation of the electrothermal gas micro-flowmeter static behaviour. *POLITEHNICA Univ. (Timișoara) Volume*, 52:1-2, 01 2007.
- [32] V.G. Mozhaev, M. Weihnacht. Subsonic leaky rayleigh waves at liquid-solid interfaces. *Ultrasonics*, 40(1-8):927-933, May 2002.
- [33] Y. Murai, Y. Tasaka, Y. Nambu, Y. Takeda, S. R. Gonzalez. Ultrasonic detection of moving interfaces in gas-liquid two-phase flow. *Flow Measurement and Instrumentation*, 21(3):356-366, September 2010.
- [34] H. Murakawa, H. Kikura, M. Aritomi. Application of ultrasonic multi-wave method for two-phase bubbly and slug flows. *Flow Measurement and Instrumentation*, 19(3-4):205-213, June 2008.
- [35] T. T. Nguyen, H. Kikura, H. Murakawa, N. Tsuzuki. Measurement of bubbly two-phase flow in vertical pipe using multiwave ultrasonic pulsed doppler method and wire mesh tomography. *Energy Procedia*, 71:337-351, May 2015.
- [36] J. Obraz. *Ultrazvuk v měřicí technice*. Praha: SNTL - Nakladatelství technické literatury, 1976.
- [37] V. Pagneux, A. Maurel. Determination of lamb mode eigenvalues. *The Journal of the Acoustical Society of America*, 110:1307-1314, 2001.
- [38] V. Pagneux, A. Maurel. Lamb wave propagation in elastic waveguides with variable thickness. *Proceedings of The Royal Society: Mathematical, Physical and Engineering Sciences*, 462:1315-1339, 2002.
- [39] V. Pagneux, A. Maurel. Lamb wave propagation in inhomogeneous elastic waveguides. *Proceedings of The Royal Society: Mathematical, Physical and Engineering Sciences*, 458:1913-1930, 2002.
- [40] T. J. Plona, W. G. Mayer, M. Behraves. Rayleigh and lamb waves at liquid-solid boundaries. *Ultrasonics*, 13(4):171-175, July 1975.
- [41] M. J. W. Povey. *Ultrasonic Techniques for Fluids Characterization*. Academic Press, jul 1997.
- [42] J. L. Rose. *Ultrasonic Guided Waves in Solid Media*. Cambridge University Press, 2014.

- [43] M. H. Sadd. *Wave Motion and Vibration in Continuous Media*. Mechanical Engineering and Applied Mechanics Department, University of Rhode Island, Kingston, RI, 1990.
- [44] V.E. Sakharov, S.A. Kuznetsov, B.D. Zaitsev, I.E. Kuznetsova, S.G. Joshi. Liquid level sensor using ultrasonic lamb waves. *Ultrasonics*, 41(4):319–322, June 2003.
- [45] C. Scandrett, N. Vasudevan. The propagation of time harmonic rayleigh-lamb waves in a bimaterial plate. *The Journal of the Acoustical Society of America*, 89(4):1606–1614, 1991.
- [46] M. S. Vijaya. *Piezoelectric Materials and Devices: Applications in Engineering and Medical Sciences*. CRC Press, apr 2016.
- [47] M. Šofer. Matematický popis interakce lambových vln s nespojitostmi v deskovitých strukturách. Habilitační práce. VŠB-TU Ostrava. 2018.
- [48] R.D. Watkins, W.H.B. Cooper, A.B. Gillespie, R.B. Pike. The attenuation of lamb waves in the presence of a fluid. *Ultrasonics*, 20(6):257–264, November 1982.
- [49] R.R. Watkins, A.B. Gillespie, M.O. Deighton, R.B. Pike. *A New Non-Invasive Technique For Detecting The Presence Of Liquid At A Specific Level In a Vessel*. Butterworth-Heinemann, 1983.
- [50] L. Zhai, N. Jin, Z. Gao, Z. Wang, D. Li. The ultrasonic measurement of high water volume fraction in dispersed oil-in-water flows. *Chemical Engineering Science*, 94:271–283, May 2013.
- [51] S. Zhang, X. Li, H. Jeong, H. Hu. Modeling linear rayleigh wave sound fields generated by angle beam wedge transducers. *AIP Advances*, 7(1):015005, January 2017.
- [52] J. Zhu, J. S. Popovics. Analytical study of excitation and measurement of fluid-solid interface waves. *Geophysical Research Letters*, 33(9), 2006.