

Curriculum Vitae

Vilém Mikula, M.S.

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I. Education & Courses (M.S & B.S. from Charles Univ. plus training in Accounting and Biology)

September 2006 – 2008: Prince George Community College, Biology Courses.

January 2005 – 2009: Catholic University of America, Washington USA, Intensive English Program, Biology.

October 2003 – December 2003: Gradua Cegos in Sezimovo Ústí, Czech Republic, Accounting course.

November 1998 – December 1998: Czech society for quality in Prague, Czech Republic, Internal audit course.

July 1992 – August 1992: Canadian language school, English course.

October 1991 – December 1992: Economy College in Prague, courses focused on stock management, financial and bank management.

September 1984 – July 1991: Charles' University in Prague, Department of Biophysics and Chemical Physics, graduated from faculty of math and physics. Major: physics of polymers. Solid background in cryogenics, vacuum devices, mathematics, informatics and physics. - Master of Science.

September 1983 – March 1984: Polytechnics Kalinin's Institute in Leningrad (today St. Petersburg), Major: electro-energetic, a specialty focused on machining and technical drawing.

September 1979 – August 1983: Gymnasium in Žďár nad Sázavou, I finished the high school with specialty focused on preparation for study abroad in former USSR.

II. Employment:

August 2018 – present: American University, Washington USA and contractor of NASA GSFC, Greenbelt USA, research associate focused on nano-technology and biology MEMS, participated in development of advanced state-of-the-art detectors for the most advanced NASA space missions (James Webb Space Telescope and future Mars missions). Extensive experience working in ultra-clean room environment at NASA's Detector Development Lab. Work and research in advanced cryogenic and vacuum systems. (Also see Publications).

November 2004 – July 2018: Catholic University of America and American University since August 2018, Washington USA and contractor of NASA GSFC, Greenbelt USA, research associate focused on nano-technology and biology MEMS, participated in development of advanced state-of-the-art detectors for the most advanced NASA space missions (James Webb Space Telescope and future Mars missions).

Extensive experience working in ultra-clean room environment at NASA's Detector Development Lab. Work and research in advanced cryogenic and vacuum systems. (Also see Publications).

August 2004 – November 2004: Alima Inc. in Prague, financial analyst.

September 1998 – July 2003: Silon Inc. in Planá nad Lužnicí, Plast Division. Research and development, product and quality control, and department for internal audit (ISO 9000 and VDA 6). Analysis of financial matters of the Silon Inc. Recovery of various funds from other owing companies. Financial controller, bookkeeper. Experience in financial politics of various firms and companies. Advisor in production planning control.

February 1998 – September 1998: CZ Kapitál Inc. in Tábor, financial analyst, broker.

October 1996 – February 1997: Komero Inc. in Prague and Sophia, Bulgaria. Financial analyst, broker. Worked in Sophia, Bulgaria, to start a new branch of Komero.

October 1994 – September 1996: Department of Polymer Physics, Charles University, Research Assistant, further experience in vacuum and cryogenic use for plasma deposition of various thin films. Because of research, invited to University of Minnesota.

August 1993 – September 1994: PPF Inc. in Prague and Moscow, Russia. Bond deposits and computing department, Financial analyst, broker.

April 1993 – July 1993: Česká spořitelna bank in Prague, department of capital trading, Financial advisor in mortgage and bond and stock management.

November 1992 – March 1993: Apollo Ship Chandlers Inc. Miami, United States, Vessel Amerikanis. Busboy on cruises between Florida, Venezuela, and Caribbean islands.

October 1991 – October 1992: Department of Polymer Physics, Charles University, Research Assistant, experience in vacuum and cryogenic use for plasma deposition of various thin films.

IV. Languages:

English – good, Russian – very good, Slovak – excellent, Czech – excellent.

V. Other Skills, Including Computer Skills:

PC (DOS, Windows, Excel, Word, Pascal, Basic). Experience with wide variety of laboratory instruments.

VI. Publications:

1.) Noroozian, O., Barrentine, E.~M., Stevenson, T.R., et al. 2018, "Photon-Counting Kinetic Inductance Detectors (KID) for Far/Mid-Infrared Space Spectroscopy with the Origins Space Telescope (OST)", American Astronomical Society Meeting Abstracts #231, 231,#447.01

- 2.) Li, M.J., Brown, A.-D., Burns, D.E., et al. 2017, “*James Webb Space Telescope Microshutter Arrays and Beyond*,” *Journal of Micro/Nanolithography, MEMS, and MOEMS*, 16, 025501
- 3.) Lowitz, A.E., Brown, A.D., Mikula, V., et al. 2016, “*Design, Fabrication, and Testing of a TiN/Ti/TiN Trilayer KID Array for 3 mm CMB Observations*,” *Journal of Low Temperature Physics*, 184, 627
- 4.) Fercana, G., Kletetschka, G., Mikula, V., & Li, M. 2011, “*An investigation into graphene exfoliation and potential graphene application in MEMS Devices*,” *Proceedings SPIE*, 7928, 79280P
- 5.) Jethava, N., Chervenak, J., Brown, A.-D., et al. 2010, “*Development of Superconducting Transition Edge sensors based on electron-phonon Decoupling*,” *Proceedings SPIE*, 7741, 774120
- 6.) Mikula, V. 2010, “*Influence of Gases Dissolved in Water to the Emergence of Ice Crystals*,” *Astrobiology Science Conference 2010: Evolution and Life: Surviving Catastrophes and Extremes on Earth and Beyond*, 1538, 5013
- 7.) Li, M.J., Brown, A.-D., Kutyrev, A.-S., Moseley, H.-S., & Mikula, V. 2010, “*JWST Microshutter array system and Beyond*,” *Proceedings SPIE*, 7594, 75940N
- 8.) Brown, A.-D., Benford, D.J., Chervenak, J.A., et al. 2009, “*Materials Characterization and Integration for Background Limited Far-Infrared Bolometric Detector Arrays*,” *American Institute of Physics Conference Series*, 1185, 326
- 9.) Aymergen, C., Driggers, P., Ohl, R., IV, et al. 2009, “*Pupil alignment reference (PAR) for the Mid-Infrared Instrument (MIRI) for optical alignment and verification on the Integrated Science Instrument Module (ISIM) in James Webb Space Telescope (JWST)*,” *Proceedings SPIE*, 7433, 74330P
- 10.) Brown, A.-D., Chuss, D., Mikula, V., et al. 2008, “*Auxiliary components for kilopixel transition edge sensor arrays*,” *Solid State Electronics*, 52, 1619
- 11.) Kohout, T., Kletetschka, G., Elbra, T., Adachi, T., & Mikula, V. 2008, “*Physical properties of meteorites—Applications in space missions to Asteroids*,” *Meteoritics and Planetary Science*, 43, 1009
- 12.) Adachi, T., Kletetschka, G., & Mikula, V. 2007, “*Frequency Dependent Susceptibility Analysis of Magnetic Carriers: Application to Fe-Oxides on Mars Surface*,” *AGU Fall Meeting Abstracts*, GP21A-0119
- 13.) Kletetschka, G., Mikula, V., Adachi, T., & Fuller, M. 2007, “*Preliminary non-invasive measurement of magnetic susceptibility of the frontal lobe: A possible antecedent marker for Alzheimer's Disease*,” *AGU Fall Meeting Abstracts*, B33C-1440
- 14.) Li, M.J., Adachi, T., Allen, C.A., et al. 2007, “*Microshutter array system for James Webb Space Telescope*,” *Proceedings SPIE*, 6687, 668709

- 15.) Kletetschka, G., Zboril, R., Adachi, T., et al. 2007, "*New Insight Into the Origin of Anomalous Magnetism of Titanohematite Lamellae in Rhombohedral Oxide Assemblages - Consequence for Mars Magnetism,*" AGU Spring Meeting Abstracts, GP33A-07
- 16.) Adachi, T., Kletetschka, G., Wasilewski, P.~J., & Mikula, V. 2007, "*Magnetic Signatures of Impact Fractured Rocks from Sierra Madera, Texas, USA - Implications to Magnetic Anomalies on Mars,*" AGU Spring Meeting Abstracts, P41A-02
- 17.) Li, M.J., Adachi, T., Allen, C., et al. 2007, "*Complex MEMS device: Microshutter Array System for Space Applications,*" Proceedings SPIE, 6556, 655602
- 18.) Adachi, T., Kletetschka, G., Chan, M., et al. 2007, "*High Field Remagnetization of Hematite Concretions from Utah, USA and Czech Republic,*" Lunar and Planetary Science Conference, 38, 1101
- 19.) Kletetschka, G., Adachi, T., & Mikula, V. 2007, "*Electromagnetic Spacecraft Used for Magnetic Navigation Within Asteroid Belt, Mining Concepts and Asteroid Magnetic Classification,*" Lunar and Planetary Science Conference, 38, 1093
- 20.) Li, M.J., Adachi, T., Allen, C., et al. 2006, "*MEMS Microshutter Arrays for James Webb Space Telescope,*" Proceedings SPIE, 6415, 64150B
- 21.) Kletetschka, G., Wasilewski, P.~J., Kohout, T., Adachi, T., & Mikula, V. 2006, "*Protocol for First Order Magnetic Paleofields Estimation,*" Meteoritics and Planetary Science Supplement, 41, 5369
- 22.) Shull, R.~D., Provenzano, V., Shapiro, A.J., et al. 2006, "*The effects of small metal Additions (Co,Cu,Ga,Mn,Al,Bi,Sn) on the magnetocaloric properties of the Gd₅Ge₂Si₂ Alloy,*" Journal of Applied Physics, 99, 08K908-08K908-3
- 23.) Kletetschka, G., Freund, F., Wasilewski, P.J., Mikula, V., & Kohout, T. 2005, "*Antipodal Magnetic Anomalies on the Moon, Contributions from Impact Induced Currents Due to Positive Holes and Flexoelectric Phenomina and Dynamo,*" 36th Annual Lunar and Planetary Science Conference, 36,