

VIACHESLAV I. ADAMCHUK, PH.D., P.E.

Associate Professor
Department of Bioresource Engineering, McGill University
21,111 Lakeshore Blvd., Ste-Anne-de-Bellevue, Quebec, H9X 3V9, Canada
phone: 514-398-7657; fax: 514-398-7990; viacheslav.adamchuk@mcgill.ca
URL: <http://adamchukpa.mcgill.ca>; Skype: vadamchuk

EDUCATION HISTORY:

PhD	Agricultural and Biological Engineering	Purdue University	08/2000
MS	Agricultural and Biological Engineering	Purdue University	08/1998
BS	Agricultural Mechanization (Mechanical Engineering)	National Agricultural University of Ukraine	06/1996

EMPLOYMENT HISTORY:

Associate Professor in the Department of Bioresource Engineering, McGill University, Ste-Anne-de-Bellevue, Quebec. 06/2010-present.

Adjunct Associate Professor in the Department of Biological Systems Engineering, University of Nebraska-Lincoln, Lincoln, Nebraska. 06/2010-05/2020.

Associate Professor and Extension Precision Agriculture Engineer in the Department of Biological Systems Engineering, University of Nebraska-Lincoln, Lincoln, Nebraska. 07/2007-05/2010.

Assistant Professor and Extension Precision Agriculture Engineer in the Department of Biological Systems Engineering, University of Nebraska-Lincoln, Lincoln, Nebraska. 12/2000-06/2007.

Post-Doctoral Assistant in the Department of Agricultural and Biological Engineering, Purdue University, West Lafayette, Indiana. 08/2000-11/2000.

Graduate Research Assistant in the Department of Agricultural and Biological Engineering, Purdue University, West Lafayette, Indiana. 06/1997-08/2000.

Visiting Research Assistant in the Department of Agricultural and Biological Engineering, Purdue University, West Lafayette, Indiana. 10/1996-05/1997.

Assistant to the Rector for International Programs and Co-coordinator of Linkage Project between National Agricultural University of Ukraine, Kyiv, Ukraine and Iowa State University, Ames, Iowa. 09/1995-10/1996.

Project Assistant in the Laboratory of Distance Monitoring, Institute of Plant Physiology and Genetics, National Academy of Science, Kyiv, Ukraine. 10/1993-09/1995.

THESIS AND DISSERTATION:

Adamchuk, V.I. 2000. Automated mapping of soil pH, potassium and mechanical impedance for site-specific management. **PhD dissertation.** West Lafayette, Indiana: Purdue University, Department of Agricultural and Biological Engineering.

Adamchuk, V.I. 1998. Rapid determination of soil pH for site-specific farming. **MS thesis.** West Lafayette, Indiana: Purdue University, Department of Agricultural and Biological Engineering.

Adamchuk, V.I. 1996. A power control system for multicylinder gasoline engines by individual cycle cut-off for trucks used in agricultural transportation. **Diploma project.** Kyiv, Ukraine: National Agricultural University of Ukraine (in Ukrainian).

AREA OF RESEARCH AND OUTREACH:

Development and evaluation of sensor systems for on-the-go determination of soil and crop attributes, investigation of geospatial data acquisition, processing and interpretation techniques, and implementation of information technologies to improve value, quality and environmental safety of crop production.

TEACHING EXPERIENCE:

McGill University

FMTF 027, Precision Agriculture, 3 cr., Winter 2011-2017.
BREE 412, Machinery Systems Engineering, 3 cr., Fall 2010.
BREE/ENVB 430, GIS for Natural Resources Management, 3 cr., Fall 2010-2015.
BREE 490/495, Engineering Design 2 and Engineering Design 3, 3 cr. Winter 2017.
BREE 504, Instrumentation and Controls, 3 cr., Winter 2012, Fall 2013-2016.
BREE/ENVB 529, GIS for Natural Resources Management, 3 cr., Fall 2016.
BREE 485/486/651/652/751/752/753/754, Undergraduate Seniors and Graduate Seminar, 1 cr., Fall 2011-2013, Winter 2013-2014.

University of Nebraska-Lincoln

MSYM 109, Physical Principles in Agriculture, 4 cr., Spring 2000, 2001 and 2006.
BSEN/AGEN 112, Introduction to Problem Solving in Agricultural and Biological Systems Engineering, 2 cr., Spring 2007-2010.
AGRO/MSYM/AGEN 431, Site-Specific Crop Management, 3 cr., Fall 2001-2009.
AGEN 896, Precision Agriculture Advances, 3 cr., Fall 2004 and individual projects.
AGRO 841, Understanding and Managing Spatial Variability in Soils, 2 cr, Spring 2005, 2006, 2008, and 2010 (distance education).

PROFESSIONAL MEMBERSHIPS:

Professional Agricultural Engineer, **License E-10643**, State of Nebraska, 2002-present.
Associate Member of the Center for Intelligent Machines (CIM) at McGill University, 2015-present

Engineering Societies:

American Society of Agricultural and Biological Engineers (ASABE), 1997-present
Precision Agriculture Committee (MS-54), 2002-present. Secretary, 2004-2006
Soil-Plant-Machine Dynamics Committee (MS-45), 2003-present
Crop Production Systems, Machinery, and Logistics Committee (MS-49), 2003-present
Robotics Competition Committee (P-127), 2008-present
Canadian Society for Bioengineering (CSBE), 2011-present
Canadian Advisory Committee for the International Organization for Standardization CAC/ISO/TC23/SC19, 2012 – present. Leadership in WG7, 2009-present
Coordinating Committee for OECD Tractor Testing in the USA, 2002-2010
Environmental and Engineering Geophysical Society (EEGS), 2009

Soil Science Societies:

Canadian Soil Science Society (CSSS), 2012-present
Soil Science Society of America (SSSA), 2008-2011
International Union of Soil Sciences (IUSS) Working Group on Proximal Soil Sensing, 2009-present. Co-founder and vice-chair, 2009-2013

Precision Agriculture Societies:

International Society of Precision Agriculture (ISPA), 2010-present. Secretary, 2014-2018.
CRAAQ Commission Géomantique et Agriculture de Précision, 2010-present
NCERA-180 Precision Technologies for Food, Fiber, and Energy Production Committee, 2001-2012

Nebraska Agricultural Technology Association (NeATA), 2001-2010

Editorial Boards:

Editorial Board of Computers and Electronics in Agriculture Journal, 2009-present

Editorial Board of Precision Agriculture Journal, 2010-present

Guest Editor of a Special Issue of Geoderma Journal (volume 199), 2011-2012

Guest Editor of a Special Issue of European Journal of Soil Science, 2013-2015

PROFESSIONAL AWARDS:

ASABE Standard Development Award for ASABE/ISO 12188-2:2012 "Positioning and Guidance in Agriculture - Part 2: Testing satellite-based auto-guidance systems" standard, 2016.

Susan J. Rosowski Professorship in recognition of distinguished scholarship and creative activity, University of Nebraska-Lincoln, 2009-2010.

UNL Extension Excellence in Team Programming Award for "GEAR-TECH-21" non-formal education program, 2009.

ASABE Educational Aids Competition Blue Ribbon Award for "The Nebraska 4-H robotics and GPS/GIS year 1 curriculum" website, 2009.

ASABE Educational Aids Competition Blue Ribbon Award for "GNSS-based auto-guidance in agriculture (SSMG-46)" short publication, 2009.

ASABE Educational Aids Competition Blue Ribbon Award for "Weed targeting herbicide management" extension circular, 2009.

Pierre C. Robert Precision Agriculture Young Scientist Award, Ninth International Conference on Precision Agriculture, Denver, Colorado, 2008.

ASAE Educational Aids Competition Blue Ribbon Award for "On-the-go vehicle-based soil sensors" extension circular, 2003.

Dinsdale Family Faculty Award for outstanding teaching, research and outreach in the Institute of Agriculture and Natural Resources, University of Nebraska-Lincoln, 2002.

ASAE Superior Paper Award for "Application of a strain gauge array to estimate soil mechanical impedance on-the-go" Transactions of the ASAE 44(6):1377-1383, 2002.

The University of Nebraska University-wide Departmental Teaching Award for the 2001-2002 Academic Year, 2002.

GRANTSMANSHIP (OVER \$5,000):

1. Tremblay, N. and **V. Adamchuk** (University subcontract). 2015-2018. Optimization of nitrogen fertilization in response to production system uncertainties such as soils, weather and economics across Canada under 4R stewardship, Fertilizer Canada, Agri-Innovation Program (AIP), \$210,452 (\$132,394 direct control).
2. **Adamchuk V.** 2015-2016. Development of a sensor network system for precision apiculture and surface soil imaging using smart phone technology. Bayer Crop Science, \$25,000.
3. **Adamchuk, V.** (PI), A. Biswas, P. Raymer, P. Hermans, and S. Prasher. 2015-2018. Development of scale-up sensor-based precision agriculture services in Ontario. Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), New Directions Research Program (NDRP), \$200,000.
4. **Adamchuk, V.I.** (PI) 2014. Computer vision cultivator guidance. National Science and Engineering Research of Canada (NSERC) Engage Project, \$25,000.
5. Madramootoo, C. (PI), **V.I. Adamchuk** (co-applicant), Bronsch, J.J., and Woods S.S. 2013-2016. Application of variable rate irrigation technology for water efficiency and conservation. National Science and Engineering Research of Canada (NSERC) Strategic Project, \$244,300 (\$100,000 direct control).
6. **Adamchuk, V.I.** (PI) 2012-2014. Zones on-the-go. Deere and Company Corporation, \$315,000 (five work orders).

7. **Adamchuk, V.I.** (PI) 2011-2017. Integrated proximal sensing of soil and crop. National Science and Engineering Research of Canada (NSERC) Discovery, \$114,000.
8. Madramootoo, C. (PI), J. Whalen, **V. Adamchuk** (co-applicant), D. Burton, S. Kulshreshtha, A. Madani, C. Tan, and T. Zhang. 2011-2015. Effects of agricultural water management systems on greenhouse gas emissions in Eastern Canada. Agriculture and Agri-Food Canada (AAFC), Agricultural Greenhouse Gases Program (AGGP), \$1,999,712 (\$225,000 direct control).
9. Yatsenko, V. (PI) and **V. Adamchuk** (Canada collaborator). 2011-2013. New methods for active remote sensing of chemical and biological agents by optical devices. Science and Technology Center in Ukraine (STCU) project #5240, \$110,000 (no direct control).
10. **Adamchuk, V.I.** (PI). 2011-2012. Integrated soil sensing technology for optimized management of land resources. Canada Foundation for Innovation (CFI), Leader Opportunity Fund (LOF), \$270,000.
11. **Adamchuk, V.** (PI), S. Ci, D. Martin, H. Shariff, and R. Ferguson. 2009-2011. Optimization of irrigation efficiency of center-pivot systems using spatial and temporal data integration. Nebraska Water, Energy and Agriculture Initiative (WEAI), \$115,386 (100% direct control).
12. Hanna, M. (PI), R. Hoy, D. Martin, W. Kranz, **V. Adamchuk** (collaborator). 2009-2011. Evaluation of biofuel driven irrigation pumps and/or electric generators for use during peak electricity demand. Nebraska Water, Energy and Agriculture Initiative (WEAI), \$137,000 (no direct control).
13. Barker, B. (PI), Krehbiel, C. Nelson, and **V. Adamchuk** (collaborator). 2009-2010. 4-H robotics: engineering for today and tomorrow. United States Department of Agriculture, 4-H National Headquarters, \$400,000 (\$10,309 direct control).
14. Kocher, M., D. Keshwani, **V. Adamchuk** (collaborator), and D. Jones. 2009-2010. Logistics and economics of dual harvesting of grain and biomass. CLAAS of Omaha, Inc., \$60,000 (no direct control).
15. Barker, B.S. (PI), **V.I. Adamchuk** (co-PI), G.L. Nugent, N. Grandgenett, and B. Chen. 2008-2013. Scale-up: Robotics and GPS/GIS in 4-H: workplace skills for the 21st century. National Science Foundation (NSF), Information Technology Experiences for Students and Teachers (ITEST), \$2,498,940 (\$120,000 direct control).
16. **Adamchuk, V.I.** (PI), C.A. Shapiro, C.S. Wortmann, R.B. Ferguson, and R. Perrin. 2008-2010. Profitability-oriented site-specific liming for soybean production. Nebraska Soybean Board, \$88,520 (100% direct control).
17. Lund, E.B. (PI) and **V.I. Adamchuk** (University collaborator) 2008-2010. Soil core analysis network for in-field measurements of nitrogen and other soil properties. United States Department of Agriculture (USDA), Small Business Innovation Research (SBIR), Phase I, \$79,677 (\$3,000 direct control).
18. Wortmann, C. (PI), **V. Adamchuk** (collaborator), R. Ferguson, C. Shapiro, J. Hay, D. Varner. 2008-2009. Farmer evaluation and learning of spatial management of soil acidity. University of Nebraska Extension, \$7000 (no direct control).
19. **Adamchuk, V.I.** (PI), A. Samal, C. Wortmann, L.K. Soh, and R.B. Ferguson. 2006-2009. Delineation of differentiated management areas within an agricultural field to optimize crop production. University of Nebraska-Lincoln, Channing B. and Katherine W. Baker Fund #3524, \$36,000 (100% direct control).
20. Barker, B.S. (PI), **V.I. Adamchuk** (co-PI), G.L. Nugent, and N. Grandgenett. 2006-2009. Robotics and GPS/GIS in 4-H: workplace skills for the 21st century. National Science Foundation (NSF), Information Technology Experiences for Students and Teachers (ITEST), \$864,139 (\$154,186 direct control).
21. Wortmann, C. (PI), **V. Adamchuk** (collaborator), R. Ferguson, D. Varner, J. Mulliken, and A. Vybiral. 2006-2007. The use of spatial information to manage river valley soils: producer/consultant education. University of Nebraska Extension, \$7,500 (no direct control).

22. **Adamchuk, V.** (PI), J. Mulliken, and A. Martin. 2005-2006. Weed targeting herbicide application. University of Nebraska Extension, \$7,000 (100% direct control).
23. Lund, E. (PI) and **V. Adamchuk** (University collaborator). 2003-2006. A soil sampling system for on-the-go analysis and mapping of pH and other properties. United States Department of Agriculture (USDA), Small Business Innovation Research (SBIR), Phase II, \$262,325 (\$60,654 direct control).
24. **Adamchuk, V.I.** (PI). 2002. Instrumentation system for deep-tillage research. John Deere Product Engineering Center, \$14,500.
25. Drummond P. (PI), C. Christy, E. Lund, and **V. Adamchuk** (University collaborator). 2002. A soil sampling mechanism for on-the-go analysis and mapping of pH and other properties United States Department of Agriculture (USDA), Small Business Innovation Research (SBIR), Phase I, \$61,888 (\$3,300 direct control).
26. Dobermann, A (PI), R. Caldwell, **V. Adamchuk** (co-PI), and R. Ferguson. 2001-2006. Thematic soil mapping and crop-based strategies for site-specific management. United States Department of Agriculture (USDA), Application of Geospatial and Precision Technologies (AGPT), \$1,025,000 (\$158,682 direct control).
27. **Adamchuk, V.I.** (PI) 2001-2002. Automated mapping of residual soil nitrate. University of Nebraska-Lincoln, Layman Trust Fund, \$7,500.

PATENTS:

1. **Adamchuk, V.I.**, A. Pouliot, and T. Stanhope. Guidance system for an agricultural vehicle and method for guiding same. Canadian Provisional Utility Patent Application No. 62/189,945.
2. **Adamchuk, V.I.**, A. Pouliot, and T. Stanhope. Steering wheel adapter for agricultural vehicle vision guidance system. Canadian Industrial Design Application No. 163,371. United States Design Application No. 29/550,818.
3. **Adamchuk, V.I.**, N. Dhawale, F. Rene-Laforest, S. Prasher, and A. Pouliot. 2016. Soil analysis apparatus, method and system. US Patent No. 9,389,214.
4. **Adamchuk, V.I.**, A.V. Skotnikov, and J.D. Speichinger. 2006. Instrumented deep tillage implement. US Patent No. 7,028,554.
5. **Adamchuk V.I.**, M.T. Morgan, and D.R. Ess. 2002. System and method for automated measurement of soil pH. US Patent No. 6,356,830.

EDITED BOOKS:

1. Viscarra Rossel, R.A., **V.I. Adamchuk**, and R. Gebbers. 2015. *European Journal of Soil Science, volume 66(4), Special Issue: Proximal Soil Sensing*. Hoboken, New Jersey: John Wiley and Sons, Inc.
2. **Adamchuk, V.I.** and R.A. Viscarra Rossel. 2013. *Geoderma, volume 199, Special Issue: Proximal Soil Sensing*. Amsterdam, The Netherlands: Elsevier.
3. Barker, B.S., G.L. Nugent, N. Grandgenett, and **V.I. Adamchuk**. 2012. *Robotics in K-12 Education: A New Technology for Learning*, 407 pages. Hershey, Pennsylvania: IGI Global.
4. **Adamchuk, V.I.** and R.A. Viscarra Rossel. 2011. *Proceedings of the Second Global Workshop on Proximal Soil Sensing*, Montreal, Quebec, Canada, 15-18 May 2011, 163 pages. Montreal, Quebec, Canada: McGill University.

BOOK CHAPTERS:

1. **Adamchuk, V.I.** 2015. Precision agriculture and food security. In: *Bringing Space Down to Earth* by the World Economic Forum's Global Agenda Council on Space Security, 17-19. Geneva, Switzerland: World Economic Forum.
2. **Adamchuk, V.I.**, B. Allred, J. Doolittle, K. Grote K., and R.A. Viscarra Rossel. 2015. Tools for proximal soil sensing. In: *Soil Survey Manual*, Supplement to Chapter 4, USDA

Handbook 18, C. Ditzler and L. West, eds. Washington, DC: USDA Natural Resources Conservation Service (31 pages, on-line publication).

<http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ref/?cid=nrcseprd329418>

3. Viscarra Rossel, R.A. and **V.I. Adamchuk**. 2013. Proximal soil sensing. In: *Precision Agriculture for Sustainability and Environmental Protection*, Chapter 6, 99-118, M.A. Oliver, T.F.A. Bishop, and B.P. Marchant, eds. Abingdon, UK: Routledge.
4. **Adamchuk, V.I.**, M.C. Patent Nygren, C.C. Lutz, and K.P. Morgan. 2012. Learning geospatial concepts as part of a non-formal education robotics experience. In: *Robotics in K-12 Education: A New Technology for Learning*, Chapter 14, 284-300, B.S. Barker, G.L. Nugent, N. Grandgenett, and V.I. Adamchuk, eds. Hershey, Pennsylvania: IGI Global.
5. Shiratsuchi, L.S., M.F. Vilela, R.B., Ferguson, J. F. Shanahan, **V.I. Adamchuk**, A.V. Resende, S.C. Hurtado, and E.J. Corazza. 2012. Developing an algorithm for on-the-go nitrogen management in the Brazilian Cerrado (in Portuguese: Desenvolvimento de um algoritmo baseado em sensores ativos de dossel para recomendação da adubação nitrogenada em taxas variáveis). In: *Agricultura de Precisão: Um Novo Olhar*, 184-188, R.Y. Inamasu, J.M. Naime, A.V. Resende, L.H. Bassoi, and A.C.C. Bernardi, eds. São Carlos, São Paulo, Brasil: Embrapa Instrumentação.
6. **Adamchuk, V.I.**, R.A. Viscarra Rossel, K.A. Sudduth, and P. Schulze Lammers. 2011. Sensor fusion for precision agriculture. In: *Sensor Fusion – Foundation and Applications*, Chapter 2, 27-40, C. Thomas, ed. Rijeka, Croatia: InTech.
7. **Adamchuk, V.I.** and R.A. Viscarra Rossel. 2011. Precision agriculture: proximal soil sensing. In: *Encyclopedia of Agrophysics*, 650-656, J. Gliński, J. Horabik, and J. Lipiec, eds. New York, New York: Springer.
8. **Adamchuk, V.I.**, R.D. Grisso, and M.F. Kocher. 2011. Spatial variability of field machinery use and efficiency. In: *GIS Applications in Agriculture. Volume Two. Nutrient Management for Energy Efficiency*, Chapter 8, 135-146, D.E. Clay and J.F. Shanahan, eds. Boca Raton, Florida: CRC Press.
9. **Adamchuk, V.I.**, R.B. Ferguson, and G.W. Hergert. 2010. Soil heterogeneity and crop growth. In: *Precision Crop Protection – the Challenge and Use of Heterogeneity*, Chapter 1, 3-16, E.C. Oerke, R. Gerhards, G. Menz, and R.A. Sikora, eds. New York, New York: Springer.
10. **Adamchuk, V.I.** and R.A. Viscarra Rossel. 2010. Development of on-the-go proximal soil sensor systems. In: *Proximal Soil Sensing*, Chapter 2, 15-28. R.A. Viscarra Rossel, A. McBratney, and B. Minasny, eds. New York, New York: Springer.
11. **Adamchuk, V.I.** and C. Wang. 2007. Collocating multiple self-generated data layers. In: *GIS Applications in Agriculture*, Chapter 10, 185-196. F.J. Pierce and D. Clay, eds. Boca Raton, Florida: CRC Press.
12. **Adamchuk, V. (Slava)** 2005. Selected sample problems in the area of power and machinery. In: *A Guide to Professional Licensure for Agricultural, Food, and Biological Systems Engineers*, F.W. Koenig and C.G. Henry, eds. St. Joseph, Michigan: ASAE.
13. Casady, W.W. and **V.I. Adamchuk**. 2003. Global positioning system and GPS receivers in agriculture. In: *Encyclopedia of Agricultural, Food, and Biological Engineering*, 444-446. D.R. Heldman, ed. New York, New York: Marcel Dekker, Inc.

REFEREED JOURNAL ARTICLES:

1. Zhang, Y., A. Biswas, and **V.I. Adamchuk**. 2016. Implementation of a sigmoid depth function to describe change of soil pH with depth. *Geoderma*, 289:1–10.
2. Ji, W., **V. Adamchuk**, A. Biswas, N. Dhawale, B. Sudarsan, Y. Zhang, R. Viscarra Rossel, and Z. Shi. 2016. Assessment of soil properties *in situ* using a prototype portable MIR spectrometer in two agricultural fields. *Biosystems Engineering*, 152:14-27.

3. Sudarsan, B., W. Ji, A. Biswas, and **V. Adamchuk**. 2016. Microscope-based computer vision to characterize soil texture and soil organic matter. *Biosystems Engineering*, 152:41-50.
4. Viscarra Rossel, R.A., T. Behrens, E. Ben-Dor, D.J. Brown, J.A.M. Demattê, K.D. Shepherd, Z. Shi, B. Stenberg, A. Stevens, **V. Adamchuk**, H. Aichi, B.G. Barthès, H.M. Bartholomeus, A.D. Bayer, M. Bernoux, K. Böttcher, L. Brodský, C.W. Du, A. Chappell, Y. Fouads, V. Genot, C. Gomez, S. Grunwald, A. Gubler, C. Guerrero, C.B. Hedley, M. Knadel, H.J.M. Morrás, M. Nocita, L. Ramirez-Lopez, P. Roudier, E.M. Rufasto Campos, P. Sanborn, V.M. Sellitto, K.A. Sudduth, B.G. Rawlins, C. Walter, L.A. Winowiecki, S.Y. Hong, W. Ji. 2016. A global spectral library to characterize the world's soil. *Earth-Science Reviews*, 155:198-230.
5. Dhawale, N.M., **V.I. Adamchuk**, S.O. Prasher, R.A. Viscarra Rossel, A.A. Ismail, and J. Kaur. 2015. Proximal soil sensing using a portable mid-infrared spectrometer. *European Journal of Soil Science*, 66(4):661-669 (doi: 10.1111/ejss.12265).
6. Kaur, J., **V.I. Adamchuk**, J.K. Whalen, and A.A. Ismail. 2015. Development of an NDIR CO₂ sensor-based system for assessing soil toxicity using substrate-induced respiration. *Sensors*, 15:4734-4748 (doi:10.3390/s150304734).
7. Klassen, S.P., J. Villa, **V. Adamchuk**, and R. Serraj. 2014. Soil mapping for improved phenotyping of drought resistance in lowland rice fields. *Field Crop Research*, 167:112-118.
8. Pan, L., **V.I. Adamchuk**, S. Prasher, R. Gebbers, R.S. Taylor, and M. Dabas. 2014. Vertical soil profiling using a galvanic contact resistivity scanning approach. *Sensors*, 14:13243-13255 (doi: 10.3390/s140713243).
9. Pan, L., **V.I. Adamchuk**, R.B. Ferguson, P.R.L. Dutilleul, S.O. Prasher. 2014. Analysis of water stress prediction quality as influenced by the number and placement of temporal soil-water monitoring sites. *Journal of Water Resource and Protection*, 6:961-971.
10. An, W., S. Ci, H. Luo, D. Wu, **V. Adamchuk**, H. Sharif, X. Wang, and H. Tang. 2013. Effective sensor deployment based on field information coverage in precision agriculture. *Wireless Communications and Mobile Computing*, 15:1606–1620 (doi: 10.1002/wcm.2448).
11. Pan, L., **V.I. Adamchuk**, D.L. Martin, M.A. Schroeder, and R.B. Ferguson. 2013. Analysis of soil water availability by integrating spatial and temporal sensor-based data. *Precision Agriculture* 14(4):414-433.
12. Roberts, D.F., R.B. Ferguson, N.R. Kitchen, **V.I. Adamchuk**, and J.F. Shanahan. 2012. Relationships between soil-based management zones and canopy sensing for corn nitrogen management. *Agronomy Journal* 104(1):119-129.
13. **Adamchuk, V.I.**, A.S. Mat Su, R.A. Eigenberg, and R.B. Ferguson. 2011. Development of an angular scanning system for sensing vertical profiles of soil electrical conductivity. *Transactions of the ASABE* 54(3): 1-11.
14. **Adamchuk, V.I.**, R.A. Viscarra Rossel, D.B. Marx, and A.K. Samal. 2011. Using targeted sampling to process multivariate soil sensing data. *Geoderma* 163(1-2): 63-73.
15. Viscarra Rossel, R.A., **V.I. Adamchuk**, K.A. Sudduth, N.J. McKenzie, and C. Lobsey. 2011. Proximal soil sensing: an effective approach for soil measurements in space and time, Chapter 5. *Advances in Agronomy* 113: 237-283.
16. Kocher, M. F., **V.I. Adamchuk**, J.A. Smith, and R.M. Hoy. 2011. Verifying power claims of high-power agricultural tractors without a PTO to sell in Nebraska. *Applied Engineering in Agriculture* 27(5): 711-715.
17. Roberts, D.F., **V.I. Adamchuk**, J.F. Shanahan, R.B. Ferguson, and J.S. Schepers. 2011. Estimation of surface soil organic matter using a ground-based active sensor and aerial imagery. *Precision Agriculture* 12(1): 82-102.
18. Shiratsuchi, L., R. Ferguson, J. Shanahan, **V. Adamchuk**, D. Rundquist, D. Marx, and G. Slater. 2011. Water and nitrogen effects on active canopy sensor vegetation indices. *Agronomy Journal* 103(6): 1815-1826.

19. Gebbers, R. and **V.I. Adamchuk**. 2010. Precision agriculture and food security. *Science* 327(5967): 828-831.
20. Easterly D.R., **V.I. Adamchuk**, M.F. Kocher, and R.M. Hoy. 2010. Using a vision sensor system for performance testing of satellite-based tractor auto-guidance. *Computers and Electronics in Agriculture* 72(2): 107-118.
21. Coffman, B.A., M.F. Kocher, **V.I. Adamchuk**, R.M. Hoy, and E.E. Blankenship. 2010. Testing fuel efficiency of a tractor with continuously variable transmission. *Applied Engineering in Agriculture* 26(1): 31-36.
22. Solari, F., J.F. Shanahan, R.B. Ferguson, and **V.I. Adamchuk**. 2010. An active sensor algorithm for corn nitrogen recommendations based on a chlorophyll meter algorithm. *Agronomy Journal* 102(4): 1090-1098.
23. Barker, B., N. Grandgenett, G. Nugent, and **V. Adamchuk**. 2010. Pairing educational robotics with geospatial technologies in informal learning environments. *Journal of Youth Development* 5(2): 48-56.
24. Nugent, G., B. Barker, N. Grandgenett, and **V. Adamchuk**. 2010. Impact of robotics and geospatial technology interventions on youth STEM learning and attitudes. *Journal of Research on Technology Education* 42(4): 391-408.
25. Barker, B.S., N. Grandgenett, G. Nugent, and **V.I. Adamchuk**. 2010. Robots, GPS/GIS, and programming technologies: the power of "digital manipulatives" in youth extension experiences. *Journal of Extension* 48(1): 1FEA7 (electronic publication, 9 pages).
26. Roberts, D.F., **V.I. Adamchuk**, J.F. Shanahan, R.B. Ferguson, and J.S. Schepers. 2009. Optimization of crop canopy sensor placement for measuring nitrogen status in corn. *Agronomy Journal* 101(1): 140-149.
27. Hemmat, A., A. Khorsandy, A. Masoumi and **V.I. Adamchuk**. 2009. Influence of failure mode induced by a horizontally-operated single-tip penetrometer on measured soil resistance. *Soil Tillage and Research* 105(1): 49-54.
28. **Adamchuk, V.I.**, T.I. Ingram, K.A. Sudduth, and S.O. Chung. 2008. On-the-go mapping of soil mechanical resistance using a linear depth effect model. *Transactions of the ASABE* 51(6): 1885-1894.
29. Hemmat, A. and **V.I. Adamchuk**. 2008. Sensor systems for measuring soil compaction: review and analysis. *Computers and Electronics in Agriculture* 63(2): 89-103.
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STANDARDS

1. **Adamchuk, V.I.** T.S. Stombaugh, and M. Demmel. 2012. ISO 12188-2. Tractors and machinery for agriculture and forestry – Test procedures for positioning and guidance systems in agriculture – Part 2: Testing of satellite-based auto-guidance systems during straight and level travel. Frankfurt, Germany: DIN.
2. Stombaugh, T.S., **V.I. Adamchuk**, and M. Demmel. 2010. ISO 12188-1. Tractors and machinery for agriculture and forestry – Test procedures for positioning and guidance systems in agriculture – Part 1: Dynamic testing of satellite-based positioning devices. Frankfurt, Germany: DIN.
3. Grisso, R.D. and **V.I. Adamchuk**. 2010. ASAE D497.7 Agricultural machinery management data. Clause 3.3 revision. St. Joseph, Michigan, ASABE.

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1. January 18-20, 2016. UK-Canada Symposium on Smart Technologies for Agriculture, London, UK (co-chair).
2. July 10-12, 2014. UK-Canada Workshop on Smart Technologies for Agriculture, Montreal, Quebec, Canada.
3. October 5-6, 2012. The Second International Conference on System Approach to Implementing Information and Resource-Preserving Technologies in Crop Production, Varva, Chernihiv Reg., Ukraine.
4. July 8-9, 2011. International Seminar on a System Approach to the Modern Agricultural Production, Varva, Chernihiv Reg., Ukraine.
5. May 15-18, 2011. The Second Global Workshop on Proximal Soil Sensing, Montreal, Quebec, Canada.

INVITED AND KEYNOTE PRESENTATIONS

- Adamchuk, V. February 1, 2017. Precision soil information & how to use it. Presented at the 4th Precision Agriculture Conference and Trade Show, London, Ontario, Canada.
- Adamchuk, V.I. October 4, 2016. Precision agriculture and sensor systems - the state of the art. Presented at 2016 Brazilian Congress on Precision Agriculture, Goiania, Goias, Brazil.
- Adamchuk, V.I. March 29, 2016. The state of the art in agricultural sensors. Presented at the Workshop on Precision Agriculture: Sensors for Agriculture, Santiago, Chile.
- Adamchuk, V.I. October 28, 2015. Smart agriculture: today and tomorrow. Presented at the Conference on Global Food Security, Montreal, Quebec.
- Adamchuk, V.I. March 11, 2015. A system approach to modern farming. Presented at the Soil Compaction Workshop, Grand Falls, New Brunswick.
- Adamchuk, V. February 10, 2015. Precision agriculture. The world of common sense. Presented at the 16th Annual Eastern Ontario Crop Conference, Kemptville, Ontario.
- November 25, 2014. Integrated tools for agriculture today and tomorrow. Presented at the CRAAQ Symposium on Fertilization, Precision Agriculture and Agro-Meteorology, Victoriaville, Quebec.
- November 4, 2014. Precision agriculture. Presented at the special seminar at the National University of Colombia, Bogota, Colombia.
- February 18, 2014. Proximal soil sensing complimentary to geophysics. Presented at the First Agricultural Geophysics Webinar, On-line.
- July 5, 2013. Precision agriculture and food security. Presented at the World Economic Forum Workshop on Bringing Space Down to Earth, Montreal, Quebec.
- May 15, 2013. Sensing technologies and economic benefits. Presented at an International Seminar on Precision Agriculture, Talca, Chile.
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