

Biotechnologia i biologia eksperymentalna roślin

Wybrane publikacje 2013-2016

2016

- Betekhtin A., Rojek M., Milewska-Hendel A., Gawecki R., Karcz J., Kurczynska E., Hasterok R. 2016. Spatial distribution of selected chemical cell wall components in embryogenic callus of *Brachypodium distachyon*. PLOS ONE 11: e0167426.
- Borowska-Żuchowska N., Kwaśniewski M., Hasterok R. 2016. Cytomolecular analysis of ribosomal DNA evolution in a natural allotetraploid *Brachypodium hybridum* and its putative ancestors – dissecting complex repetitive structure of intergenic spacers. Frontiers in Plant Science 7: 1499. DOI: 10.3389/fpls.2016.01499, ISSN 1664-462X
- Burian A., Barbier de Reuille P., Kuhlemeier C. 2016. Patterns of stem cell divisions contribute to plant longevity. Curr. Biol. 26: 1385-1394.
- Bzdęga K., Janiak A., Książczyk T., Lewandowska A., Gancarek M., Sliwinska E., Tokarska-Guzik B. 2016. A survey of genetic variation and genome evolution within the invasive *Fallopia* complex. PLOS ONE 11(8): e0161854. DOI: 10.1371/journal.pone.0161854, ISSN 1932-6203
- Chwiałkowska K., Nowakowska U., Mroziewicz A., Szarejko I., Kwaśniewski M. 2016. Water-deficiency conditions differently modulate the methylome of roots and leaves in barley (*Hordeum vulgare* L.). Journal of Experimental Botany 67: 1109-1121. DOI: 10.1093/jxb/erv552, ISSN 0022-0957
- Dobrowolska I., Andrade G.M., Clapham D., Egertsdotter U. 2016. Histological analysis reveals the formation of shoots rather than embryos in regenerating cultures of *Eucalyptus globulus*. Plant Cell Tiss. Organ Cult.. DOI 10.1007/s11240-016-1111-5
- Gawecki R., Sala K., Kurczyńska E., Świątek P., Płachno B.J. 2016. Immunodetection of some pectic, arabinogalactan proteins and hemicellulose epitopes in the micropylar transmitting tissue of apomictic dandelions (*Taraxacum*, *Asteraceae*, *Lactuceae*). Protoplasma. DOI 10.1007/s00709-016-0980-0
- Gruszka D., Górniak M., Głodowska E., Wierus E., Oklestkova J., Janeczko A., Małuszyński M., Szarejko I. 2016. A reverse-genetics mutational analysis of the barley *hvdwarf* gene results in identification of a series of alleles and mutants with short stature of various degree and disturbance in BR biosynthesis allowing a new insight into the process. International Journal of Molecular Sciences 17: 1-18. DOI: 10.3390/ijms17040600, ISSN 1661-6596
- Gruszka D., Janeczko A., Dziurka M., Pocięcha E., Olestkova J., Szarejko I. 2016. Barley brassinosteroid mutants provide an insight into phytohormonal homeostasis in plant reaction to drought stress. Frontiers in Plant Science 7: 1824. DOI: 10.3389/fpls.2016.01824, ISSN 1664-462X.
- Janeczko A., Gruszka D., Pocięcha E., Dziurka M., Filek M., Jurczyk B., Kalaji H.M., Kocurek M., Waligórski P. 2016. Physiological and biochemical characterisation of watered and drought-stressed barley mutants in the *hvdwarf* gene encoding C6-

- oxidase involved in brassinosteroid biosynthesis. *Plant Physiology and Biochemistry* 99: 126-141. DOI: 10.1016/j.plaphy.2015.12.003, ISSN 0981-9428
- Janiak A., Kwaśniewski M., Szarejko I. 2016. Gene expression regulation in roots under drought. *Journal of Experimental Botany* 67(4): 1003-1014. DOI: 10.1093/jxb/erv512, ISSN 0022-0957
- Kościerz-Grzesiok A., Sieroń-Stołtny K., Polak M., Sieroń A., Karcz W. 2016. Effect of low frequency pulsed magnetic field on gravitropic response and cell elongation in coleoptiles of maize seedlings. *Gen. Physiol. Biophys.* 35: 417-424.
- Kurtyka R., Pokora W., Tukaj Z., Karcz W. 2016. Effects of juglone and lawsone on oxidative stress in maize coleoptile cells treated with IAA. *AoB PLANTS* 8. DOI: 10.1093/aobpla/plw073
- Kwaśniewski M., Daszkowska-Golec A., Janiak A., Chwiałkowska K., Nowakowska U., Sablok G., Szarejko I. 2016. Transcriptome analysis reveals the role of the root hairs as environmental sensors to maintain plant functions under water-deficiency conditions. *Journal of Experimental Botany* 67(4): 1079-1094. DOI: 10.1093/jxb/erv498, ISSN 0022-0957
- Marzec M. 2016. Perception and signaling of strigolactones. *Frontiers in Plant Science* 7: 1260. DOI: 10.3389/fpls.2016.01260, ISSN 1664-462X
- Marzec M. 2016. Strigolactones as part of the plant defence system. *Trends in Plant Science* 21(11): 900-903. DOI: 10.1016/j.tplants.2016.08.010, ISSN 1360-1385
- Marzec M., Gruszka D., Tylec P., Szarejko I. 2016. Identification and functional analysis of the *hvd14* gene involved in strigolactone signaling in *Hordeum vulgare*. *Physiologia Plantarum* 158: 341-355. DOI: 10.1111/ppl.12460, ISSN 0031-9317
- Mazur E., Benková E., Friml J. 2016. Vascular cambium regeneration and vessel formation in wounded inflorescence stems of *Arabidopsis*. *Scientific Reports* 6:33754. DOI: 10.1038/srep33754
- Mikołajczak K., Ogrodowicz P, Gudyś K., Krystkowiak K., Sawikowska A., Frohmberg W., Górny A., Kędziora A., Jankowiak J., Józefczyk D., Karg G., Andrusiak J., Krajewski P., Szarejko I., Surma M., Adamski T., Guzy-Wróbelska J., Kuczyńska A. 2016. Quantitative trait loci for yield and yield-related traits in spring barley populations derived from crosses between European and Syrian cultivars. *PLOS ONE* 11(5): e0155938. DOI: 10.1371/journal.pone.0155938, ISSN 2190-3883
- Milewska-Hendel A., Gawecki R., Zubko M., Stróż D., Kurczyńska E. 2016. Diverse influence of nanoparticles on plant growth with a particular emphasis on crop plants. *Acta Agrobotanica*. DOI: 10.5586/aa.1694
- Nowak K., Gaj M.D. 2016. Stress-related function of *bhlh109* in somatic embryo induction in *Arabidopsis*. *Journal of Plant Physiology* 193: 119-126. DOI 10.1016/j.jplph.2016.02.012, ISSN 0176-1617
- Ogrodowicz P., Adamski T., Mikołajczak K., Kuczyńska A., Surma M., Krajewski P., Sawikowska A., Górny A.G., Gudyś K., Szarejko I., Guzy-Wróbelska J., Krystkowiak K. 2016. Qtls for earliness and yield-forming traits in the Lubuski × camb barley RIL

population under various water regimes. Journal of Applied Genetics. DOI:10.1007/s13353-016-0363-4, ISSN 2190-3883

- Palowski B., Małkowska E., Kurtyka R., Szymanowska-Pułka J., Gucwa-Przepióra E., Małkowski Ł., Woźnica A., Małkowski E. 2016. Bioaccumulation of Heavy Metals in Selected Organs of Black Locust (*Robinia pseudoacacia*) and their Potential Use as Air Contamination Bioindicators. Pol. J. Environ. Stud. 25(5): 2085-2096l.
- Pietruszka M., Haduch-Sendecka, A. 2016. Effective diffusion rates and cross-correlation analysis of "acid growth" data. Acta Physiol. Plant. 38(53): 1-17. DOI 10.1007/s11738-016-2068-z
- Robaszekiewicz E., Idziak-Helmcke D., Tkacz M.A., Chrominski K., Hasterok R. 2016. The arrangement of *Brachypodium distachyon* chromosomes in interphase nuclei. Journal of Experimental Botany 67: 5571-5583.
- Skubacz A., Daszkowska-Golec A., Szarejko I. (2016). The role and regulation of ABI5 (ABA-insensitive 5) in plant development, abiotic stress responses and phytohormone crosstalk. Frontiers in Plant Science 7: 1884. DOI: 10.3389/fpls.2016.01884, ISSN: 1664-462X
- Słota M, Małuszyński M., Szarejko I. 2016. An automated, cost-effective and scalable, flood-and-drain based root phenotyping system for cereals. Plant Methods 12: 1-15. DOI: 10.1186/s13007-016-0135-5, ISSN 1746-4811
- Tkacz M.A., Chrominski K., Idziak-Helmcke D., Robaszekiewicz E., Hasterok R. 2016. Chromosome territory modeller and viewer. PLOS ONE 11: e0160303
- Wójcik A.M., Gaj M.D. 2016. *Mir393* contributes to the embryogenic transition induced in vitro in *Arabidopsis* via the modification of the tissue sensitivity to auxin treatment. Planta 244: 231-243. DOI: 10.1007/s00425-016-2505-7, ISSN 0032-0935
- Wróbel-Marek J., Kurczyńska E., Płachno B.J., Kozieradzka-Kiszkurno M. 2016. Identification of symplasmic domains in the embryo and seed of *Sedum acre* L. (*Crassulaceae*). Planta. DOI 10.1007/s00425-016-2619-y
- Zajdel P., Pietruszka M., Haduch-Sendecka, A. 2016. Application of the effective formula of growth functional to quantitative description of growth of plant cells. Acta Physiol. Plant. 38: 216. DOI:10.1007/s11738-016-2233-4

2015

- Barbier de Reuille P., Routier-Kierzkowska A-L., Kierzkowski D., Bassel G.W., Schupbach T., Tauriello G., Bajpai N., Strauss S., Weber A., Kiss A., Burian A., Hofhuis H., Sapala A., Lipowczan M., Heimlicher M.B., Robinson S., Bayer E.M., Basler K., Koumoutsakos P., Roeder A.H.K., Aegerter-Wilmsen T., Nakayama N., Tsiantis M., Hay A., Kwiatkowska D., Xenarios I., Kuhlemeier C., Smith R.S. 2015. Morphographx: A platform for quantifying morphogenesis in 4D. Elife: e05864. DOI: 10.7554/elife.05864
- Burian A., Raczyńska-Szajgin M., Borowska-Wykręt D., Piątek A., Mitsuhiro A., Kwiatkowska D. 2015. The *CUP-SHAPED COTYLEDON2* and *3* genes have a

postmeristematic effect on *Arabidopsis thaliana* phyllotaxis. *Annals of Botany* 115: 807-820.

- Dobrowolska I., Kwaśniewska J., Barlow P.W., Kurczyńska E.U. 2015. The fate of surface cell layers of *Daucus carota* (L.) Embryos raised in suspension culture. *Plant Biosystems*. DOI: 10.1080/11263504.2014.989288
- Hasterok R., Betekhtin A., Borowska-Zuchowska N., Brąszewska-Zalewska A., Idziak-Helmcke D., Robaszkiewicz E., Wolny E. 2015. Molecular cytogenetics in the genus *Brachypodium*. In: *Plant Genetics and Genomics: Crops and Models*. JP Vogel (ed.), Springer, pp: 1-16.
- Idziak D., Robaszkiewicz E., Hasterok R. 2015. Spatial distribution of centromeres and telomeres at interphase varies among *Brachypodium* species. *Journal of Experimental Botany* 66: 6623-6634.
- Karcz J., Woźnica A., Binkowski M., Klonowska-Olejniak M., Bernaś T., Karczewski J., Migula P. 2015. SEM-EDS and X-ray micro computed tomography studies of skeletal surface pattern and body structure in the freshwater sponge *Spongilla lacustris* collected from Goczałkowice reservoir habit (Southern Poland). *Folia Histochemica et Cytobiologica* 53: 88-95.
- Marzec M., Melzer M., Szarejko I. 2015. Root hair development in the grasses: What we already know and what we still need to know. *Plant Physiology* 168: 407-414. DOI: 10.1104/pp.15.00158, ISSN 1532-2548
- Marzec M., Muszyńska A. 2015. *In silico* analysis of the genes encoding proteins that are involved in the biosynthesis of the RMS/MAX/D pathway revealed new roles of strigolactones in plants. *International Journal of Molecular Sciences* 16: 6757-6782. DOI: 10.3390/ijms16046757, ISSN 1422-0067
- Marzec M., Szarejko I., Melzer M. 2015. Arabinogalactan proteins are involved in root hair development in barley. *Journal of Experimental Botany* 66: 1245-1257. DOI: 10.1093/jxb/eru475, ISSN 0022-0957
- Nowak K., Wójcikowska B., Gaj M.D. 2015. ERF022 impacts the induction of somatic embryogenesis in *Arabidopsis* through the ethylene-related pathway. *Planta* 241: 967-985. DOI: 10.1007/s00425-014-2225-9, ISSN 0032-0935
- Pietruszka M., Haduch-Sendecka A. 2015. Ion frequency landscape in growing plants. *PLOS ONE* 10. DOI 10.1371/journal.pone.0143787
- Pietruszka M., Haduch-Sendecka A. 2015. Pressure-induced wall thickness variations in multi-layered wall of a pollen tube and Fourier decomposition of growth oscillations. *Gen. Physiol. Biophys.* 2: 145-156. DOI 10.4149/gpb_2014035
- Płachno B.J., Kurczyńska E., Świątek P. 2015. Integument cell differentiation in dandelions (*Taraxacum*, *Asteraceae*, *Lactuceae*) with special attention paid to plasmodesmata. *Protoplasma*. DOI 10.1007/s00709-015-0894-2
- Siemieniuk A., Karcz, W. 2015. Effect of K⁺ and Ca²⁺ on the indole-3-acetic acid-and fusicoicin-induced growth and membrane potential in maize coleoptile cells. *AoB Plants* 7. DOI 10.1093/aobpla/plv070

- Stolarek M., Gruszka D., Brąszewska-Zalewska A., Małuszyński M. 2015. Alleles of newly identified barley gene *hvparp3* exhibit changes inefficiency of DNA repair. *DNA Repair* 28: 116-130. DOI: 10.1016/j.dnarep.2015.02.018 1568-7864, ISSN 1568-7864
- Stolarek M., Gruszka D., Brąszewska-Zalewska A., Małuszyński M. 2015. Functional analysis of the new barley gene *hvk80* indicates that it plays a key role in double-strand DNA break repair and telomere length regulation. *Mutagenesis* 30: 785-797. DOI: 10.1093/mutage/gev033, ISSN 0267-8357
- Trela Z., Burdach Z., Siemieniuk A., Przystalski S., Karcz W. 2015. Effect of trimethyltin chloride on slow vacuolar (SV) channels in vacuoles from red beet (*Beta vulgaris* L.) taproots. *PLOS ONE* 10. DOI 10.1371/journal.pone.0136346
- Wójcikowska B., Gaj M.D. 2015. LEAFY COTYLEDON2-mediated control of the endogenous hormone content: implications for the induction of somatic embryogenesis in *Arabidopsis*. *Plant Cell Tissue and Organ Culture* 121: 255-258. DOI: 10.1007/s11240-014-0689-8, ISSN 0167-6857

2014

- Betekhtin A., Jenkins G., Hasterok R. 2014. Reconstructing the evolution of *Brachypodium* genomes using comparative chromosome painting. *PLOS ONE* 9: e115108.
- Białek J., Potocka I., Szymanowska-Pułka J. 2014. Various scenarios of the cell pattern formation in *Arabidopsis* lateral root. *Acta Societatis Botanicorum Poloniae* 83: 85-89.
- Boudaoud A., Burian A., Borowska-Wykręt D., Uyttewaal M., Wrzalik R., Kwiatkowska D., Hamant O. 2014. Fibriltool, an ImageJ plug-in to quantify fibrillar structures in raw microscopy images. *Nature Protocols* 9: 457-463.
- Brąszewska-Zalewska A., Tylikowska M., Kwaśniewska J., Szymanowska-Pułka J. 2014. Epigenetic chromatin modifications in barley after mutagenic treatment. *Journal of Applied Genetics* 55: 449-456.
- Burdach Z., Kurtyka R., Siemieniuk A., Karcz W. 2014. Role of chloride ions in the promotion of auxin-induced growth of maize coleoptile segments. *Ann. Bot. (London)* 5: 1023-1034. DOI 10.1093/aob/mcu170
- Catalan M., Chalhoub B., Chochois V., Garvin D., Hasterok R., Manzaneda A., Mmur L., Pecchioni N., Rasmussen S., Vogel J., Voxeur A. 2014. Update on the genomics and basic biology of *Brachypodium*. *Trends in Plant Science* 19: 414-418.
- Chmielewska B., Janiak A., Karcz J., Guzy-Wróbelska J., Forster B.P., Nawrot M., Rusek A., Smyda P., Kędziorski P., Małuszyński M., Szarejko I. 2014. Morphological, genetic and molecular characteristics of barley root hair mutants. *Journal of Applied Genetics* 55: 433-447.
- Dockter C., Gruszka D., Braumann I., Druka A., Druka I., Franckowiak J., Gough S.P., Janeczko A., Kurowska M., Lundqvist J., Lundqvist U., Marzec M., Matyszczyk I., Müller A.H., Oklestkova J., Schulz B., Zakhrabekova S., Hansson M. 2014. Induced

variations in brassinosteroid genes define barley height and sturdiness, and expand the green revolution genetic toolkit. *Plant Physiology* 166: 1912-1927.

- Haduch-Sendecka A., Pietruszka M., Zajdel P. 2014. Power spectrum, growth velocities and cross-correlations of longitudinal and transverse oscillations of individual *Nicotiana tabacum* pollen tube. *Planta* 240(2): 263-276. DOI: 10.1007/s00425-014-2083-5
- Idziak D., Hazuka I., Poliwczak B., Wiszyńska A., Wolny E., Hasterok R. 2014. Insight into the karyotype evolution of *Brachypodium* species using comparative chromosome barcoding. *PLOS ONE* 9: e93505.
- Janiak A., Galej K., Parusel J.B., Szarejko I. 2014. A study of the genetic variation of the aquatic fern *Marsilea quadrifolia* L. Preserved in botanical collections in Poland and originated from natural populations in Europe. *Flora* 209: 655-665.
- Lipowczan M., Piekarska-Stachowiak A. 2014. Comparison of empirical rules describing cell plate formation in 2D computer simulations of apical meristem in plants. *Journal of Biological Systems* 22: 61-71.
- Marzec M., Kurczyńska E. 2014. Importance of symplasmic communication in cell differentiation. *Plant Signaling & Behavior* 9: e27931. DOI: 10.4161/psb.27931tt, ISSN 1559-2324
- Marzec M., Melzer M., Szarejko I. 2014. The evolutionary context of root epidermis cell patterning in grasses (*Poaceae*). *Plant Signaling & Behavior* 9: e27972. DOI: 10.4161/psb.27972, ISSN 1559-2324
- Marzec M., Muszyńska A., Melzer M., Sas-Nowosielska H., Kurczyńska E.U. 2014. Increased symplasmic permeability in barley root epidermal cells correlates with defects in root hair development. *Plant Biology* 16: 476-484.
- Mazur E., Kurczyńska E.U., Friml J. 2014. Cellular events during interfascicular cambium ontogenesis in inflorescence stems of *Arabidopsis*. *Protoplasma* 251(5): 1125-1139.
- Muszyńska A., Jarocka K., Kurczyńska E.U. 2014. Plasma membrane and cell wall properties of an aspen hybrid (*Populus tremula x tremuloides*) parenchyma cells under the influence of salt stress. *Acta Physiol Plant.* 36: 1155-1165.
- Piekarska-Stachowiak A., Szary M., Ziemer B., Besenyei L., Woźniak G. An application of the plant functional group concept to restoration practice on coal mine spoil heaps. *Ecological Research* 29: 843-853.
- Pietruszka M., Lipowczan M. 2014. Check Sum Computing in Doubly Frustrated Microtubule Clusters. *Neuroquantology* 12: 344-349.
- Pietruszka M., Lipowczan M. Check Sum Computing in Doubly Frustrated Microtubule Clusters. *Neuroquantology* 3: 344-349. DOI: 10.14704/nq.2014.12.3.760
- Raczyńska-Szajgin M., Nakielski J. 2014. Growth and cellular patterns in the petal epidermis of *Antirrhinum majus*: empirical studies. *Annals of Botany* 113: 403-416.
- Rudnicka M., Polak M., Karcz W. 2014. Cellular responses to naphthoquinones: juglone as a case study. *Plant Growth Regul.* 72(3): 239-248. DOI 10.1007/s10725-013-9855-y

Szymanowska-Pułka J., Lipowczan M. 2014. Growth rate distribution in the forming lateral root of *Arabidopsis*. *Annals of Botany* 114: 913-921.

Wolny E., Braszewska-Zalewska A., Hasterok R. 2014. Spatial distribution of epigenetic modifications in *Brachypodium distachyon* embryos during seed maturation and germination. *PLOS ONE* 9: e101246.

2013

Borowska-Wykręt D., Elsner J., De Veylder L., Kwiatkowska D. 2013. Defects in leaf epidermis of *Arabidopsis thaliana* plants with CDKA;1 activity reduced in the shoot apical meristem. *Protoplasma* 250: 955-961.

Braszewska-Zalewska A., Wolny E., Śmiałek L., Hasterok R. 2013. Tissue-specific modifications in root apical meristem cells of *Hordeum vulgare*. *PLOS ONE* 8: e69204.

Burian A., Ludynia M., Uyttewaal M., Traas J., Boudaoud A., Hamant O., Kwiatkowska D. 2013. A correlative microscopy approach relates microtubule behaviour, local organ geometry, and cell growth at the *Arabidopsis* shoot apical meristem. *Journal of Experimental Botany* 64: 5753-5767.

Daszkowska-Golec A., Chorżży E., Małuszyński M., Szarejko I. 2013. Towards the identification of new genes involved in ABA-dependent abiotic stresses using *Arabidopsis* suppressor mutants of *abh1* hypersensitivity to ABA during seed germination. *International Journal of Molecular Sciences* 14: 13403-13432. DOI: 10.3390/ijms140713403, ISSN 1422-0067

Daszkowska-Golec A., Szarejko I. 2013. Open or close the gate – stomata action under the control of phytohormones in drought stress conditions. *Frontiers in Plant Science* 4: 138. DOI:10.3389/fpls.2013.00138, ISSN 0168-9452

Daszkowska-Golec A., Wojnar W., Rosikiewicz M., Szarejko I., Małuszyński M., Szwejkowska-Kulińska Z., Jarmolowski A. 2013. *Arabidopsis* suppressor mutant of *abh1* shows a new face of the already known players – *ABH1* (CBP80) and *ABI4* – in response to ABA and abiotic stresses during seed germination. *Plant Molecular Biology* 81: 189-209. DOI: 10.1007/s11103-012-9991-1, ISSN 0167-4412

Gliwicka M., Nowak K., Balazadeh S., Mueller-Roeber B., Gaj M.D. 2013. Extensive modulation of the transcription factor transcriptome during somatic embryogenesis in *Arabidopsis thaliana*. *PLOS ONE* 8: e69261. DOI: 10.1371/journal.pone.0069261, ISSN 1932-6203

Gruszka D. 2013. The brassinosteroid signaling pathway—New key players and interconnections with other signaling networks crucial for plant development and stress tolerance. *International Journal of Molecular Sciences* 14: 8740-8774.

Gucwa-Przepióra E., Błaszowski J., Kurtyka R., Małkowski Ł., Małkowski E. 2013. Arbuscular mycorrhiza of *Deschampsia cespitosa* (*Poaceae*) at different soil depths in highly metal-contaminated site in southern Poland. *Acta Soc Bot Pol* 82(4):251-258. DOI: 10.5586/asbp.2013.033

- Guzy-Wróbelska J., Filek M., Kaliciak A., Szarejko I., Machackova I., Krekule J., Barciszewska M. 2013. Vernalization and photoperiod-related changes in the DNA methylation state in winter and spring rapeseed. *Acta Physiologia Plantarum* 35: 817-827.
- Guzy-Wróbelska J., Grzybkowska D. 2013. Dwadzieścia lat mapowania genów i QTL na mapach genetycznych jęczmienia. *Postępy Biologii Komórki* 40(3): 475-492. ISSN 0324-833X
- Houston K., McKim S.M., Comadrana J., Bonar N., Druka N., Uzrek N., Cirillo E., Guzy-Wróbelska J., Collin N.C., Halpin C., Hansson M., Dockter C., Druka A., Waugh R. 2013. Variation in the interaction between alleles of *hvacpetala2* and *microrna172* determines the density of grains on the barley inflorescence. *Proc Natl Acad Sci* 110(41): 16675-16680.
- Koprowski R., Wróbel Z., Korzyńska A., Chwiałkowska K., Kwaśniewski M. 2013. Automatic analysis of 2D polyacrylamide gels in the diagnosis of DNA polymorphisms. *Biomedical Engineering Online* 12:68. DOI: 10.1186/1475-925X-12-68, ISSN 1475-925X
- Koprowski R., Wróbel Z., Kleszcz A., Wilczyński S., Woźnica A., Łozowski B., Pilarczyk M., Karczewski J., Migula P. 2013. Mobile sailing robot for automatic estimation of fish density and monitoring water quality. *BioMedical Engineering OnLine* 12: 60. DOI: 10.1186/1475-925X-12-60
- Kwaśniewska J., Kwaśniewski M. 2013. Comet-FISH for the evaluation of plant DNA damage after mutagenic treatments. *Journal of Applied Genetics* 54: 407-415.
- Kwaśniewski M., Chwiałkowska K., Kwaśniewska J., Kusak J., Siwiński K., Szarejko I. 2013. Accumulation of peroxidase-related reactive oxygen species in trichoblasts correlates with root hair initiation in barley. *Journal of Plant Physiology* 170: 185-195.
- Kwaśniewski M., Nowakowska U., Szumera J., Chwiałkowska K., Szarejko I. 2013. iRootHair: A comprehensive root hair genomics database. *Plant Physiology* 161: 28-35.
- Lip S., Kurowska M., Szarejko I. 2013. Rodzina czynników transkrypcyjnych NAC, a zwiększenie tolerancji na stres niedoboru wody u roślin tolerancji na stres niedoboru wody u roślin. *Postępy Biochemii* 59: 295-303.
- Lipowczan M., Piekarska-Stachowiak A., Elsner J., Pietrakowski J. 2013. The tensor-based model of plant growth applied to leaves of *Arabidopsis thaliana*: a two-dimensional computer model. *Comptes Rendus Biologies* 336: 425-432.
- Lundqvist J., Braumann I., Kurowska M., Müller A.H., Hansson M. 2013. Catalytic turnover triggers exchange of subunits of the magnesium chelatase AAA motor unit. *Journal of Biological Chemistry* 288: 24012-24019.
- Marzec M., Melzer M., Szarejko I. 2013. Asymmetric growth of root epidermal cells is related to the differentiation of root hair cells in *Hordeum vulgare* (L.). *Journal of Experimental Botany* 64(16): 5145-5155. DOI: 10.1093/jxb/ert300, 0022-0957, ISSN 0022-0957

- Marzec M., Muszyńska A., Gruszka D. 2013. The role of strigolactones in nutrient-stress responses in plants. *International Journal of Molecular Sciences* 14: 9286-9304.
- Nakielski J., Lipowczan M. 2013. Spatial and directional variation of growth rates in *Arabidopsis* root apex: a modelling study. *PLOS ONE* 8(12): e84337. DOI:10.1371/journal.pone.0084337
- Piekarska-Stachowiak A., Nakielski J. 2013. The simulation model of growth and cell divisions for the root apex with an apical cell in application to *Azolla pinnata*. *Planta* 238: 1051-1064.
- Pietruszka M. 2013. Pressure-induced cell wall instability and growth oscillations in pollen tubes. *PLOS ONE* 11: e75803. DOI 10.1371/journal.pone.0075803
- Pietruszka M. 2013. Special Solutions to the Ortega Equation *J. Plant Growth Regul.* (Print) 1: 102-107. DOI 10.1007/s00344-012-9280-x
- Pietruszka M., Lipowczan M. 2013. Conscious Events as Possible Consequence of Topological Frustration in Microtubules. *Neuroquantology* 11: 426-430. DOI: 10.14704/nq.2013.11.3.680
- Raczyńska-Szajgin M., Nakielski J. 2013. Growth and cellular patterns in the petal epidermis of *Antirrhinum majus*: empirical studies. *Annals of Botany*. DOI: 10.1093/aob/mct263
- Robinson S., Burian A., Couturier E., Landrein B., Louveaux M., Neumann E.D., Peaucelle A., Weber A., Nakayama N. 2013. Mechanical control of morphogenesis at the shoot apex. *Journal of Experimental Botany* 64: 4729-4744.
- Sala K., Potocka I., Kurczyńska E. 2013. Spatio-temporal distribution and methyl-esterification of pectic epitopes provide evidence of developmental regulation of pectins during somatic embryogenesis in *Arabidopsis thaliana*. *Biologia Plantarum* 57(3): 410-416.
- Szczecińska M., Kwaśniewski M., Chwiałkowska K., Sawicki J. 2013. Isolation and characterization of microsatellite loci in *Pulsatilla patens* (L.) Mill. (*Ranunculaceae*) a rare and endangered plant species in Europe. *Conservation Genetics Resources* 5: 421-423.
- Szymanowska-Pułka J. 2013. Form matters: morphological aspects of lateral root development. *Annals of Botany* 112: 1643-1654.
- Woźnica A., Nowak A., Ziemiński P., Kwaśniewski M., Bernaś T. 2013. Stimulatory effect of xenobiotics on oxidative electron transport of chemolithotrophic nitrifying bacteria used as biosensing element. *PLOS ONE* 8: e53484. DOI: 10.1371/journal.pone.0053484, ISSN 1932-6203
- Wójcikowska B., Jaskóła K., Gąsiorek P., Meus M., Nowak K., Gaj M.D. 2013. *LEAFY COTYLEDON2 (LEC2)* promotes embryogenic induction in somatic tissues of *Arabidopsis*, via YUCCA-mediated auxin biosynthesis. *Planta* 238: 425-440.