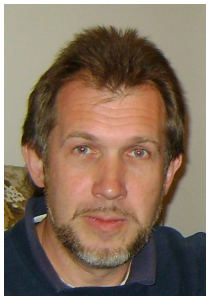


Профессор, д-р Сергей Шабала (Тасмания, Австралия)

Занимаемая должность:
Профессор (физиология растений), руководитель научной группы физиологии стресса (School of Agricultural Science, University of Tasmania);
Содиректор Австралийско-китайского научного центра по биологии стресса у растений

Научные интересы и компетенция

Физиология стресса у растений, мембранный транспорт, биофизика, клеточная биология

Квалификация

1989: защита кандидатской диссертации (PhD по физиологии растений, Институт экспериментальной ботаники, Минск, Белоруссия)
1984: Бакалавр (диплом с отличием), по специальности «Автоматизация и системы управления», Кишиневский политехнический институт, Молдова

Career history

2011-до настоящего времени	Профессор (физиология растений)	Университет Тасмании
200 -2010	Доцент (физиология растений)	Университет Тасмании
2003-2006	Старший преподаватель (питание растений)	Университет Тасмании
1999-2002	Преподаватель (питание растений)	Университет Тасмании
1998-1999	Преподаватель-ассистент (питание растений)	Университет Тасмании
1995-1998	Стипендиат (биофизика)	Университет Тасмании
2013	Приглашенный профессор	Университет Флоренции, Италия
2013	Приглашенный профессор	Автономный университет Барселоны
2012	Приглашенный профессор	Университет Колима, Мексика
2007	Приглашенный профессор	Университет Вербурга, Германия
2007	Приглашенный научный сотрудник	Институт молекулярной патологии растений Министерства сельского хозяйства США (US Department of Agriculture – U SDA)
2006	Приглашенный профессор	Университет Колима, Мексика
2001	Приглашенный научный сотрудник	Университет Гронингена, Нидерланды
2000	Приглашенный научный сотрудник	Университет Вашингтона (Сиетл, США)

Основные достижения

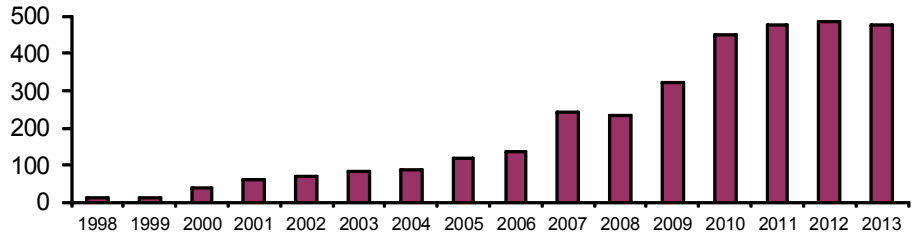
В рейтинге позиция Топ 0,5 % ученых по версии Thomson ISI Essential Science Indicators.
За последние 15 лет от фондов по конкурсу получено грантов 1-й категории в размере около 6 млн долларов
Отредактированы 4 книги для ведущих мировых издательств (Springer; Humana; CABI).
С 2000 года прорецензировано ~500 рукописей для 70 международных научных журналов, в том числе Science; Plant Cell; Plant J.; Plant Physiol.
Подготовлено ~150 презентаций на национальных и международных конференциях.

	Получено 12 патентов. По приглашению сделано 25 докладов на крупнейших международных конференциях (включая три Гордоновские научные конференции) и более 40 – на институтских конференциях в 17 странах За последние 10 лет подготовлены отзывы на 18 кандидатских и докторских диссертаций. Прорецензированы примерно 100 заявок на гранты, поданных в основные национальные фонды 14 стран, включая the ARC, BBSRC (Великобритания), USDA, NSF (США), NSERC (Канада), Австрия, Израиль, Голландия, Швейцария, Чехия, Южная Африка, Катар, Россия, Польша, Сербия Сотрудничество более чем с 40 лабораториями из 24 стран В руководимой лаборатории были приняты 40 иностранных гостей из 12 стран.
Научное руководство	Под руководство защищены 12 кандидатских и 2 докторских диссертации В настоящее время осуществляю руководство 23 кандидатскими работами и одной докторской работой (три соискателя – не из Университета Тасмании)
Преподавание	Физиология и продуктивность сельскохозяйственных культур, питание растений, почвенное плодородие, садоводство и овощеводство
Текущая работа в качестве редактора	Journal of Experimental Botany (IF =5,48; 12 позиция из 189 in Plant Science; приглашенный редактор); Functional Plant Biology (IF =2,73; член-консультант редакционного совета Environmental and Experimental Botany (IF = 2,92; член редакционного совета) Plant and Soil (IF = 2.73; приглашенный редактор) Frontiers in Plant Biophysics and Modeling (вновь организованный журнал, приглашенный редактор) Plant Signaling and Behavior (IF = 2,0; приглашенный редактор) Peer Journal (вновь организованный журнал; приглашенный редактор)
Представительство	Представитель по клеточной биологии; Австралийское общество наук о растениях (2008-2010) Государственный представитель (Тасмания); Австралийское биофизическое общество (1996-2002)
Участие в организационных и иных комитетах	Председатель, Международный симпозиум по окислительному стрессу и гибели клеток растений (Флоренция, 2013) Член Международного консультативного совета , 2-я Международная конференция по оптимизации использования подверженных засолению экосистем в аридных районах (Каир, 2013) Член оргкомитета, Ежегодный съезд Австралийского биофизического общества (1996) Член оргкомитета, Международная конференция по сельскому хозяйству (Мелитополь, Украина, 1994) Член Международного комитета по селекции, Университет науки и технологий короля Абдуллы (KSA, 2012)
Награды	Премия Вице-канцлера за выдающиеся научные достижения (2009, Университет Тасмании) Премия Дина выдающиеся научные достижения (2013, FSET; Университет Тасмании) Премия Дина выдающиеся научные достижения (2006, FSET; Университет Тасмании) Премия Альфа Андерсона (Австралия) (1999) Премия Кабинета министров Украины за выдающиеся научные результаты (1994-1995)
Административные обязанности (примеры)	с 2011 года по настоящее время: Факультетский комитет по руководству научными исследованиями 2011-2012: консультативный комитете UTAS ERA (Университет Тасмании) 2011-2012: Член академического совета Университета Тасмании 2009-2010: член Совета выпускников Университета 2004-2005: Член Комитета по грантам Университета Тасмании 2008-2009: Член Комитета по стипендиям Университета Тасмании member с 2007года до настоящего времени: член Коллегии экспертов Университета Тасмании

2006-2010: Член Комитета управления
с 2008 года до настоящего времени: координатор исследований по соисканию научной степени
1989-1992: Председатель Совета молодых ученых Института экологической генетики (Молдавская академия наук)
1989-1992: Член ученого совета Института экологической генетики (Молдавская академия наук)

Библиометрия

Динамика цитирования (по данным Scopus, на 1 августа 2013 года)



Общее число публикаций на английском языке до настоящего времени = 161 (142 статьи в рецензируемых журналах, 15 книжных глав, 4 книги)
Публикации с 2003 года) = 127 (109 статьи в рецензируемых журналах, 14 книжных глав, 4 книги)
Всего цитирований за время работы = **3363** (Scopus); H-index = **34**
Средний IF по публикациям за последние 10 лет = 4.18; в среднем на статью = 27.1
В 70 % (113 of 160) публикаций – один из основных автор (113 of 160)

Publications

Статьи в реферируемых журналах:
(импакт-фактор ISI для каждой статьи приведен после названия)

2013

1. Bonales-Alatorre E, **Shabala S**, Chen ZH, Pottosin I (2013) Reduced tonoplast FV and SV channels activity is essential for conferring salinity tolerance in a facultative halophyte, *Chenopodium quinoa*. *Plant Physiol* **162**: 940-952 [IF = **6.53**]
2. Bose J, Xie YJ, Shen WB, **Shabala S** (2013) Haem oxygenase modifies salinity tolerance in Arabidopsis by controlling K^+ retention via regulation of the plasma membrane H^+ ATPase and by altering SOS1 transcript levels in roots. *J Exp Bot* **64**: 471-481[IF = **5.48**]
3. Rodrigo-Moreno A, Andrés-Colás N, Poschenrieder C, Gunsé B, Peñarrubia L, **Shabala S** (2013) Calcium- and potassium-permeable plasma membrane transporters are activated by copper in Arabidopsis root tips: linking copper transport with cytosolic hydroxyl radical production. *Plant Cell Environ* **36**: 844-855 [IF = **5.21**]
4. Jayakannan M, Bose J, Babourina O, Rengel Z, **Shabala S** (2013) Salicylic acid improves salinity tolerance in Arabidopsis by restoring membrane potential and preventing salt-induced K^+ loss via a GORK channel. *J Exp Bot* **64**: 2255-2268 [IF = **5.48**]
5. Adolf VI, Jacobsen S-E, **Shabala S** (2013) Salt tolerance mechanisms in quinoa (*Chenopodium quinoa willd.*). *Env Exp Bot* **92**: 43-54 [IF = **2.98**]
6. Teakle NL, Bazihizina N, **Shabala S**, Colmer TD, Barrett-Lennard EG, Rodrigo-Moreno A, Läuchli AE. (2013) Differential tolerance to combined salinity and O_2 deficiency in the halophytic grasses *Puccinellia ciliata* and *Thinopyrum ponticum*: The importance of K^+ retention in roots. *Env Exp Bot* **87**: 69-78 [IF = **2.98**]
7. Bonales-Alatorre E, Pottosin I, Shabala L, Chen ZH, Zeng F, Jacobsen S-E**, Shabala S** (2013) Differential activity of plasma and vacuolar membrane transporters contributes to genotypic differences in salinity tolerance in a halophyte species, *Chenopodium quinoa*. *Int J Mol Sci* **14**: 9267-9285 [IF = **2.46**]
8. Bose J, Babourina O, **Shabala S**, Rengel Z (2013) Low-pH and

aluminum resistance in Arabidopsis correlates with high cytosolic magnesium content and increased magnesium uptake by plant roots. *Plant Cell Physiol* **54**: 1093-1104 [IF = **4.7**]

9. Tegg R, Shabala S, Cuin TA, Wilson C (2013) Enhanced resistance to the cellulose biosynthetic inhibitors, thaxtomin A and isoxaben in Arabidopsis thaliana mutants, also provides specific co-resistance to the auxin transport inhibitor, 1-NPA. *BMC Plant Biology* 13 (76) DOI: 10.1186/1471-2229-13-76 [IF = **4.35**]

10. Pirie A, Parsons D, Renggli J, Narkowicz C, Jacobson GA, **Shabala S** (2013) Modulation of flavonoid and tannin production of *Carpobrotus rossii* by environmental conditions. *Env Exp Bot* **87**, 19-31[IF = **2.98**]

11. Maksimović JD, Zhang J, Zeng F, Živanović BD, Shabala L, Zhou M, **Shabala S** (2013) Linking oxidative and salinity stress tolerance in barley: can root antioxidant enzyme activity be used as a measure of stress tolerance? *Plant Soil* **365**: 141-155 [IF = **2.73**]

12. Barret-Lennard EG, **Shabala S** (2013) The waterlogging/salinity interaction in higher plants revisited – focusing on the hypoxia-induced disturbance to K^+ homeostasis. *Funct Plant Biol* **40**: 872-882 [IF = **2.92**]

13. Shabala L, McMeekin T, **Shabala S** (2013) Thraustochytrids can be grown in low salt media without affecting PUFA production. *Marine Biotechology* (*in press*; accepted 18.1.13) [IF = **3.43**]

14. Rodrigo-Moreno A, Poschenrieder C, **Shabala S** (2013) Transition metals: a double edge sward in ROS generation and signaling. *Plant Signaling & Behavior* 8(3): e23425. [IF = **2.00**]

15. Ordonez N, Shabala L, Gehring C, **Shabala S** (2012) Using the Non-invasive Microelectrode Ion Flux Estimation Technique (MIFE) to study the regulation of root membrane transport by signaling molecules. *Methods Molecular Biol* **1016**: 95-106; DOI 10.1007/978-1-62703-441-8_7

16. **Shabala S**, Hariadi Y, Jacobsen S-E (2013) Genotypic difference in salinity tolerance in quinoa is determined by differential control of xylem Na^+ loading and stomatal density. *J Plant Physiol* **170**: 906-914 [IF = **2.79**]

17. Laohavisita A, Richards SL, Shabala L, Chen C, Colaço RDDR, Swarbreck SM, Shaw E, Dark A, **Shabala S**, Shang Z, Davies JM (Plant Phys) Salinity-induced calcium signaling and root adaptation in *Arabidopsis thaliana* require the calcium regulatory protein annexin1. *Plant Physiol* (*in press*; DOI:10.1104/ pp.113.217810) [IF = **6.53**]

18. Zeng F, Shabala L, Zhou M, Zhang GP, **Shabala S** (2013) Barley responses to combined waterlogging and salinity stress: separating effects of oxygen deprivation and elemental toxicity. *Frontiers Plant Physiol* (in press; DOI: 10.3389/fpls.2013.00313)

19. **Shabala S** (2013) Learning from halophytes: physiological basis and strategies to improve abiotic stress tolerance in crops. *Ann Bot* (in press; accepted 22/07/2013) [IF = **3.99**]

20. Wu H, Shabala L, Barry K, Zhou M, **Shabala S** (2013) Ability of leaf mesophyll to retain potassium correlates with salinity tolerance in wheat and barley. *Physiol Plantar* (*in press*; DOI: 10.1111/ppl.12056) [IF = **3.11**]

21. Shabala L, Walker EJ, Eklund A, Randall-Demllo S, **Shabala S**, Guven N, Cook AL, Eri RD (2013) Exposure of colonic epithelial cells to oxidative and endoplasmic reticulum stress causes rapid potassium efflux and calcium influx. *Cell Biochem Funct* (*in press*; DOI: 10.1002/cbf.2946) [IF = **1.77**]

22. Bose J, Shabala L, Pottosin I, Zeng F, Velarde-Buendía AM, Massart A, Poschenrieder C, Hariadi Y, **Shabala S** (2013) Kinetics of xylem loading, membrane potential maintenance, and sensitivity of K^+-

permeable channels to ROS: physiological traits that differentiate salinity tolerance between pea and barley. *Plant Cell Environ* (*in press*; accepted Aug 2013) [IF = **5.21**]

2012

23. **Shabala S**, Cuin TA, Shabala L, Newman IA (2012) Quantifying kinetics of net ion fluxes from plant tissues by non-invasive microelectrode measuring MIFE technique. *Methods Mol Biol* **913**: 119-134.
24. **Shabala S**, Shabala L, Bose J, Cuin TA, Newman IA (2012) Ion Flux Measurements Using the MIFE Technique. *Methods Mol Biol* **953**: 171-183
25. Laohavisit A, Shang Z, Rubio L, Cuin TA, Véry A, Wang A, Mortimer JC, Macpherson N, Coxon KM, Battey NH, Brownlee C, Park OK, Sentenac H, **Shabala S**, Webb AAR, Davies JM (2012) Arabidopsis annexin1 mediates the radical-activated plasma membrane Ca^{2+} - and K^+-permeable conductance in root cells. *Plant Cell* **24**: 1522-33 [IF = **8.98**]
26. Adolf VI, **Shabala S**, Andersen MN, Razzaghi F, Jacobsen S (2012) Varietal differences of quinoa's tolerance to saline conditions. *Plant Soil* **357**: 117-29 [IF = **2.73**]
27. Cuin TA, Zhou M, Parsons D, **Shabala S** (2012) Genetic behaviour of physiological traits conferring cytosolic K^+/Na^+ homeostasis in wheat. *Plant Biology* **14**: 438-46 [IF = **2.39**]
28. Velarde-Buendía AM, **Shabala S**, Cvikrova M, Dobrovinskaya O, Pottosin I (2012) Salt-sensitive and salt-tolerant barley varieties differ in the extent of potentiation of the ROS-induced K^+ efflux by polyamines. *Plant Physiol Biochem* **61**: 18-23 [IF = **2.83**]
29. Pandolfi C, Mancuso S, **Shabala S** (2012) Physiology of acclimation to salinity stress in pea (*Pisum sativum*). *Env Exp Bot* **84**: 44-51[IF = **2.98**]
30. Pottosin I, Velarde-Buendía A-, Zepeda-Jazo I, Dobrovinskaya O, **Shabala S** (2012) Synergism between polyamines and ROS in the induction of Ca^{2+} and K^+ fluxes in roots. *Plant Signal Behav* **7**: 1084-7 [IF = **2.0**]
31. Shabala L, Mackay A, Tian Y, Jacobsen SE, Zhou DW, **Shabala S** (2012) Oxidative stress protection and stomatal patterning as components of salinity tolerance mechanism in quinoa (Chenopodium quinoa). *Physiol Plantar* **146**: 26-38 [IF = **3.11**]

2011

32. **Shabala S** (2011) Physiological and cellular aspects of phytotoxicity tolerance in plants: the role of membrane transporters and implications for crop breeding for waterlogging tolerance. *New Phytol* **190:** 289-298 [IF = **6.64**]
33. Demidchik V, Shang ZL, Shin R, Colaco R, Laohavisit A, **Shabala S**, Davies JM (2011) Receptor-like activity evoked by extracellular ADP in Arabidopsis root epidermal plasma membrane. *Plant Physiol* **156**: 1375-1385 [IF = **6.53**]
34. **Shabala S**, Baekgaard L, Shabala L, Fuglsang A, Babourina O, Palmgren MG, Cuin TA, Rengel Z, Nemchinov LG (2011) Plasma membrane Ca^{2+} transporters mediate virus-induced acquired resistance to oxidative stress. *Plant Cell Environ* **34**: 406-417 [IF = **5.21**]
35. Cuin TA, Bose J, Stefano G, Jha D, Tester M, Mancuso S, **Shabala S** (2011) Assessing the role of root plasma membrane and tonoplast Na^+/H^+ exchangers in salinity tolerance in wheat: in planta quantification methods. *Plant Cell Environ* **34**: 947-961 [IF = **5.21**]
36. Wegner LH, Stefano G, Shabala L, Rossi M, Mancuso S, **Shabala S** (2011) Sequential depolarization of root cortical and stelar cells induced by an acute salt shock - implications for Na^+ and K^+ transport into xylem

vessels. *Plant Cell Environ* **34**: 859-869 [IF = **5.21**]

37. **Shabala** S, Mackay A. (2011) Ion Transport in Halophytes. *Adv Bot Res* **57**: 151-199 [*invited review*; IF = **2.85**]

38. Hariadi Y, Marandon K, Tian Y, Jacobsen SE, **Shabala S** (2011) Ionic and osmotic relations in quinoa (*Chenopodium quinoa Willd.*) plants grown at various salinity levels. *J Exp Bot* **62**: 185-193 [IF = **5.48**]

39. Guijt RM, Armstrong JP, Candish E, Lefleur V, Percey W, **Shabala S**, Hauser PC, Breadmore MC (2011) Microfluidic chips for capillary electrophoresis with integrated electrodes for capacitively coupled conductivity detection based on printed circuit board technology. *Sensors Actuators B* **159**: 307-313 [IF = **3.37**]

40. **Shabala S**, Shabala L (2011) Ion transport and osmotic adjustment in plants and bacteria. *BioMol Concepts* **2**: 407-419 [*invited review*; new journal; IF not available yet]

41. **Shabala S**, Bækgaard L, Shabala L, Fuglsang AT, Cuin TA, Nemchinov LG, Palmgren MG (2011) Endomembrane Ca^{2+}-ATPases play a significant role in virus-induced adaptation to oxidative stress. *Plant Signal Behavior* **6**(7): 1053-1056 [IF = **2.0**]

42. Zepeda-Jazo I, Velarde-Buendía AM, Enríquez-Figueroa R, Bose J, **Shabala S**, Muñiz-Murguía J, Pottosin I (2011) Polyamines interact with hydroxyl radicals in activating Ca^{2+} and K^+ transport across the root epidermal plasma membranes. *Plant Physiol* **157**: 2167–2180 [IF = **6.53**]

2010

43. **Shabala S**, Shabala L, Cuin TA, Pang JY, Percey W, Chen ZH, Conn S, Eing C, Wegner LH (2010) Xylem ionic relations and salinity tolerance in barley. *Plant J* **61**: 839-853 [IF = **6.16**]

44. **Shabala S**, Babourina O, Rengel Z, Nemchinov LG (2010) Non-invasive microelectrode potassium flux measurements as a potential tool for early recognition of virus–host compatibility in plants. *Planta* **232**: 807-815 [IF = **3.00**]

45. Demidchik V, Cuin TA, Svistunenko D, Smith SJ, Miller AJ, **Shabala S**, Sokolik A, Yurin V (2010) Arabidopsis root K^+ efflux conductance activated by hydroxyl radicals: single-channel properties, genetic basis and involvement in stress-induced cell death. *J Cell Sci* **123**: 1468-1479 [IF = **6.11**]

46. Pandolfi C, Pottosin I, Cuin TA, Mancuso S, **Shabala S** (2010) Specificity of polyamine effects on NaCl-induced ion flux kinetics and salt stress amelioration in plants. *Plant Cell Physiol* **51**: 422-434 [IF = **4.70**; Editor-in-Chief's Choice]

47. Cuin TA, Parsons D, **Shabala S** (2010) Wheat cultivars can be screened for NaCl salinity tolerance by measuring leaf chlorophyll content and shoot sap potassium. *Funct Plant Biol* **37**: 656–664 [IF = **2.92**]

48. ten Hoopen F, Cuin TA, Pedas P, Hegelund JN, **Shabala S**, Schjoerring JK, Jahn TP (2010) Competition between uptake of ammonium and potassium in barley and Arabidopsis roots: molecular mechanisms and physiological consequences. *J Exp Bot* **61**: 2303-2315 [IF = **5.48**]

49. Bose J, Babourina O, **Shabala S**, Rengel Z (2010) Aluminium-dependent dynamics of ion transport in Arabidopsis: specificity of low pH and aluminium responses. *Physiol Plantar* **139**: 401-412 [IF = **3.11**]

2009

50. **Shabala S** (2009) Salinity and programmed cell death: unravelling mechanisms for ion specific signalling. *J Exp Bot* **60**: 709-711 [IF = **5.48**; invited review]

51. Demidchik V, Shang Z, Shin R, Thompson E, Rubio L, Laohavist A, Mortimer JC, Chivasa S, Slabas AR, Glover BJ, Schachtman DP, **Shabala S**, Davies JM (2009) Plant extracellular ATP signalling by plasma membrane NADPH oxidase and Ca^{2+} channels. *Plant J* **58**: 903-913 [IF = **6.16**]

52. **Shabala S**, Pang JY, Zhou MZ, Shabala L., Cuin TA, Nick P, Wegner LH (2009) Electrical signalling and cytokinins mediate effects of light and root cutting on ion uptake in intact plants. *Plant Cell Environ* **32**: 194-207[IF = **5.21**]

53. **S**habala L, McMeekin T, **Shabala S** (2009) Osmotic adjustment and requirement for sodium in marine protist thraustochytrid. *Environmental Microbiol* **11**: 1835-1843 [IF = **5.84**]

54. Shabala L, Bowman J, Brown J, Ross T, McMeekin T, **Shabala S** (2009) Ion transport and osmotic adjustment in *Escherichia coli* in response to ionic and non-ionic osmotica. *Environmental Microbiol* **11**: 137-148 [IF = **5.84**]

55. Smethurst CF, Gill WM, **Shabala S** (2009) Using excised leaves to screen lucerne for salt tolerance. *Plant Signal Behavior* **4**(1): 1-3 [IF = **2.0**]

56. Pottosin I, Wherrett T, **Shabala S** (2009) SV channels dominate the vacuolar Ca^{2+} release during intracellular signaling. *FEBS Letters* **583**: 921-926 [IF = **3.54**]

57. **Shabala S** (2009) Metal cations in CO_2 assimilation and conversion by plants. *Journal of Metals* **61**: 28-34

58. Valencia-Cruz G, Shabala L Delgado-Enciso I, Bonales-Alatorre E, **Shabala S**, Pottosin I, Dobrovinskaya O (2009) Kbg and Kv1.3 channels mediate potassium efflux in the early phase of apoptosis in Jurkat T lymphocytes. *American J Physiol* **297**: C1544-C1553 [IF = **4.23**]

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