



**The 11th International Symposium on Plant-Soil Interactions at Low pH
(PSILPH)
October 16-21, 2023. Nanjing, China**

SYMPOSIUM PROGRAM

Monday, 16 October 2023

- 12:00 - Registration opens at lobby of the Grand Metropark Hotel Nanjing
- 18:00 - Welcome reception at the café on the first floor of Grand Metropark Hotel Nanjing

Tuesday, 17 October 2023

08:30 – 08:45 Welcome Address by Director of Institute of Soil Science, Chinese Academy of Sciences and Chairman of PSILPH International Steering Committee

Part 1 Chair: Ren Fang Shen (Institute of Soil Science, Chinese Academy of Sciences, China)

08:45 – 09:30 Plenary talk

Molecular mechanisms of crops for high tolerance to mineral stresses in acid soils

Jian Feng Ma (Okayama University, Japan)

09:30 – 10:00 Keynote

Aluminium resistance, root exudates and the root microbiome

Peter R Ryan (CSIRO Agriculture and Food, Australia)

10:00 – 10:30 Keynote

Sensing of aluminum by a LRR receptor-like kinase ALR1 in Arabidopsis

Shao-Jian Zheng (Zhejiang University, China)

10:30 – 11:00 **Coffee Break**

Part 2 Chair: Claudia Teixeira Guimarães (Nucleus of Applied Biology, Embrapa Maize and Sorghum, Brazil)

11:00 – 11:15 Navigating plant nutrition: Insights into the roles of aluminum activated malate transporters (ALMTs) as anion channels

Min Yu (Foshan University, China)

11:15 – 11:30 OsOPT7 mediates xylem unloading of Fe for its preferential distribution in rice

Naoki Yamaji (Okayama University, Japan)

11:30 – 11:45 Rice resists magnesium deficiency by regulating chlorophyll degradation, photosynthetic carbon assimilation and circadian rhythms

Zhi-Chang Chen (Fujian Agriculture and Forestry University, China)

11:45– 12:00 Upstream transcriptional regulation mechanism of root cell wall in response to aluminum stress in *Arabidopsis thaliana*

Xiao Fang Zhu (Institute of Soil Science, Chinese Academy of Sciences, China)

12:00 – 14:00 **Lunch/Poster**

Part 3 Chair: Jian Feng Ma (Okayama University, Japan)

14:00 – 14:45 Plenary talk

Using alkaline materials to reverse weathering and sequester carbon in low pH soils

Yong-Guan Zhu (Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, China)

14:45 – 15:15 Keynote

Soil acidification and plant adaptations along 2-million year dune

chronosequences in the southwest Australian biodiversity hotspot

Hans Lambers (University of Western Australia, Australia)

15:15 – 15:45 Keynote

STOP1-regulated system; Pleiotropic roles in stress tolerance and its possible origin in evolution

Hiroyuki Koyama (Gifu University, Japan)

15:45 – 16:15 **Coffee Break**

Part 4 Chair: Shao-Jian Zheng (Zhejiang University, China)

16:15 – 16:30 Aluminium induces faster stomatal responses in barley

Meixue Zhou (University of Tasmania, Australia)

16:30 – 16:45 Aluminum stress signaling and responses in Arabidopsis

Zhong-Bao Yang (Shandong University, China)

16:45 – 17:00 Posttranslational regulation of ART1 in rice

Noriyuki Konishi (Okayama University, Japan)

17:00 – 17:15 STOP1 activates NRT1.1-mediated nitrate uptake to create a favorable rhizospheric pH for plant adaptation to acidity

Jia Yuan Ye (Zhejiang University, China)

17:15 – 17:30 Bed soil acidification process and aluminum accumulation patterns in *Panax ginseng*-a perennial herb with storage fleshy root

Jiangfeng You (Jilin University, China)

18:00 – Dinner at the Grand Metropark Hotel Nanjing

Wednesday, 18 October 2023

Part 5 Chair: Zdenko Lončarić (Josip Juraj Strossmayer University of Osijek, Croatia)

- 08:30 – 09:15 Plenary talk
Omics-enabled modeling of soil microbial feedbacks in response to climate change
Jizhong Zhou (University of Oklahoma, USA)
- 09:15 – 09:45 Keynote
Domestication of soybean symbiotic N₂ fixation towards low pH soils
Hong Liao (Fujian Agriculture and Forestry University, China)
- 09:45 – 10:15 Keynote
Evidences of significant soil acidification across forest and agricultural ecosystems
Kazumichi Fujii (Forestry and Forest Products Research Institute, Japan)
- 10:15 – 10:45 **Coffee Break**

Part 6 Chair: Xue Qiang Zhao (Institute of Soil Science, Chinese Academy of Sciences, China)

- 10:45 – 11:00 Microbial bioagents impact on micronutrients uptake by corn on acid soils
Zdenko Loncaric (Faculty of Agrobiotechnical Sciences Osijek, Croatia)
- 11:00 – 11:15 Metabolic activity of rhizosphere microbiome in red soil and stress tolerance of crop
Yuting Liang (Institute of Soil Science, Chinese Academy of Sciences, China)

- 11:15 – 11:30 Rhizobial inoculation induces recruitment of beneficial microbes by metabolite to alleviate aluminum stress in soybeans
Tengxiang Lian (South China Agricultural University, China)
- 11:30 – 11:45 Harnessing the microbiome to control plant parasitic weeds
Francisco Dini-Andreote (Pennsylvania State University, USA)
- 11:45 – 12:00 Boron supply alleviates aluminum toxicity-inhibited polar auxin transport and pectin dynamics in root transition zone
Lin Tao (Foshan University, China)

12:00 – 14:00 **Lunch/Poster**

Part 7 Chair: Peter R Ryan (CSIRO Agriculture and Food, Australia)

- 14:00 – 14:30 Keynote
Scientific issues and strategies of acid soil use in China
Ren Fang Shen (Institute of Soil Science, Chinese Academy of Sciences, China)
- 14:30 – 15:00 Keynote
Aluminum signaling and post-transcriptional regulation of the STOP1 transcription factor
Chao-Feng Huang (Shanghai Center for Plant Stress Biology, CAS Center for Excellence in Molecular Plant Sciences, Chinese Academy of Sciences, China)
- 15:00 – 15:30 Keynote
Improving acid soil sustainability via of aluminum tolerance and phosphorus efficiency mechanisms in maize and sorghum
Claudia Teixeira Guimarães (Nucleus of Applied Biology, Embrapa Maize and Sorghum, Brazil)

15:30 – 16:00 **Coffee Break**

Part 8 Chair: Hong Liao (Fujian Agriculture and Forestry University, China)

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- 16:00 – 16:15 A clade of receptor-like cytoplasmic kinases and 14-3-3 proteins coordinate the lipid-originated inositol hexaphosphate biosynthesis and phosphate homeostasis
Zhong Jie Ding (Zhejiang University, China)
- 16:15 – 16:30 Genetic improvement of legume roots for adaption to acid soils
Xinxin Li (Fujian Agriculture and Forestry University, China)
- 16:30 – 16:45 Functional characterization of two novel phosphorus transporters in barley
Hengliang Huang (Okayama University, Japan)
- 16:45 – 17:00 OsPHO1;3 mediates redistribution of phosphorus in rice
Jing Che (Institute of Soil Science, Chinese Academy of Sciences, China)
- 17:00 – 17:15 Rice OsRPY1 plays a negative role in P accumulation and grain yield
Gui Jie Lei (Yunnan University, China)
- 17:15 – 17:30 The mechanism of boron modulates root elongation and restores aluminum toxicity by modulating auxin carriers in root apical transition zone
Zhishan Guo (Foshan University, China)
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- 18:00 – Dinner at the Grand Metropark Hotel Nanjing

Thursday, 19 October 2023

Part 9 Chair: Prakash Nagabovanalli B (University of Agricultural Sciences, India)

- 08:30 – 09:00 Keynote
Activation of solid Al and its inhibition during soil acidification
Ren Kou Xu (Institute of Soil Science, Chinese Academy of Sciences, China)
- 09:00 – 09:30 Keynote
Soil acidification: the Challenge of the 21st century
Yakov Kuzyakov (University of Göttingen, Germany)
- 09:30 – 09:45 Effect of biodegradable plastics on soil acidity, greenhouse gas emission and plant growth under aerobic and flooding conditions
Kazuyuki Inubushi (Tokyo University of Agriculture, Japan)
- 09:45 – 10:00 Influence of LD slag and potassium feldspar fertilizer formulations on pH, potassium availability and performance of maize in low pH soil
Pallavi Thimmappa (University of Agricultural Sciences, India)
- 10:00 – 10:15 Effectiveness and mechanisms of organic materials in alleviating red soil acidification
Zejiang Cai (Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences, China)
- 10:15 – 10:45 **Coffee Break**
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Part 10 Chair: Kazumichi Fujii (Forestry and Forest Products Research Institute, Japan)

- 10:45 – 11:00 Enhancing growth performance of *Amaranthus viridis* on moderately saline soil through organic amendments application
Abdullah Abdul Rahman (Sime Darby Plantation Research Sdn Bhd, Malaysia)

- 11:00 – 11:15 More attention should be paid to the acidification of purple soil in China
ZhongYi Li (Southwest University, China)
- 11:15 – 11:30 Biochar retards Al toxicity to maize (*Zea mays* L.) during soil acidification: The effects and mechanisms
Renyong Shi (Institute of Soil Science, Chinese Academy of Sciences, China)
- 11:30 – 11:45 Long-term moderate P fertilization increases the complexity of soil microbial community and promotes synergistic regulation of P cycling genes to improve the availability of P in acid soil
Ming Lang (Southwest University, China)
- 11:45 – 12:00 Bacterial and fungal denitrifiers abundance, composition and activity in arable acid soils
Huifang Xu (Jiangxi Agricultural University, China)

12:00 – 14:00 **Lunch/Poster**

Part 11 Chair: Ren Kou Xu (Institute of Soil Science, Chinese Academy of Sciences, China)

- 14:00 – 14:30 Keynote
Unraveling the benefits of gypsum for sustainable management and utilization of acid soils
Prakash Nagabovanalli B (University of Agricultural Sciences, India)
- 14:30 – 14:45 The mechanisms of enhancing peanut yield in continuous cropping on acidic red soil by organic fertilizers containing effective microbes
Ying Teng (Institute of Soil Science, Chinese Academy of Sciences, China)

- 14:45 – 15:00 pH-induced changes in fungal abundance and composition affects soil heterotrophic nitrification
Yi Zhang (Nanjing Normal University, China)
- 15:00 – 15:15 Organo-mineral associations through polyvalent cation bridges are vulnerable to soil acidification in grassland ecosystems
Chenglong Ye (Nanjing Agricultural University, China)
- 15:15 – 15:30 Dissection of root architectural traits and fundamental mechanisms in response to individual and combined aluminium-phosphorus stress in lentil
Dharmendra Singh (Indian Agricultural Research Institute, India)
- 15:30 – 15:45 Effects of seed pelletization on improving rapeseed growth in acidic soils
Wenhao Ran (Huazhong Agricultural University, China)
- 15:45 – 16:00 The fluctuation patterns in the microbiome of soybean with varying phosphorus efficiency as affected by arbuscular mycorrhizal fungi inoculation with phosphorus fertilization in an acidic soil
Zhongling Wen (Nanjing University)
- 16:00 – 16:15 Physiological, transcriptomic and molecular characterization of cadmium uptake in Moso bamboo (*Phyllostachys edulis*), a non-timber forest species
Fan Yang (Zhejiang Agriculture & Forestry University, China)

16:15 – 16:45 **Coffee Break**

Part 12 Chair: Ren Fang Shen (Institute of Soil Science, Chinese Academy of Sciences, China)

16:45 – 17:00 **Poster Awards**

17:00 – 17:30 Closing ceremony by Local organizer and Chairman of PSILPH International Steering Committee

18:00- Banquet at banquet hall on the second floor of the Grand Metropark

Hotel Nanjing

Friday, 20 October 2023

Field trip:

- 8:30 -12:00, Departure from the Grand Metropark Hotel Nanjing to Yixing city, which is famous for Chinese teapot, a handmade ceramic that is only found in China
- 12:00 -13:30, Lunch
- 13:30 -17:30, Transportation from Yixing city to Liyang city to visit a typical Chinese acid soil profile where tea is cultivated
- 17:30 - , Back to the Grand Metropark Hotel Nanjing
- 18:00- Dinner

Other Information:

- For registration on site, contact Dr. Xiaoying Dong (cell phone, 13813848229).
- Plenary, keynote, and oral presentations will be held at banquet hall (A hall) on the second floor of the Grand Metropark Hotel Nanjing.
- Plenary presentation is a 45-min slot, a talk for 36 min and discussion for 8 min 30 sec, followed by a 30-sec interval for the next speaker. Keynote presentation is a 30-min slot, a talk for 25 min and discussion for 4 min 30 sec, followed by a 30-sec interval for the next speaker. Oral presentation is a 15-min slot, a talk for 12 min and discussion for 2 min 30 sec, followed by a 30-sec interval for the next speaker. To keep the session on time, please strictly follow the time limits.
- Please pass your presentation file to our staff at the registration desk one day before your presentation. For any problem, contact Jing Che (jche@issas.ac.cn, 15094301559), Lu Wang (w1@issas.ac.cn, 18994012401).
- Poster presentations and coffee break will be arranged at banquet hall (C hall) on

the second floor of the Grand Metropark Hotel Nanjing.

- Posters should be prepared in English. The poster panel should not exceed 80 cm (width) x 120 cm (height). Pushpins for mounting your poster are provided by the Meeting Committee.
- Lunch and dinner buffet during meeting will be provided at the Grand Metropark Hotel Nanjing.