

SCO – 1stYOUNG SCIENTISTS CONCLAVE
Shaping SCO-STI Partnership: Young Scientists Perspectives



NOMINEE’S DETAILS/INFORMATION

Country Name :China

Last Name:Li

First Name:Haipeng

Date of Birth :
(19/01/1991)

Address: Guangming Road, Wangqu Street, Chang'an District, Xi'an, Shaanxi Province, China

Telephone:17792611526

Email:s_lihaipeng@sina.com

Title:assistant professor

Gender:Male

Institution/Affiliation:College of Information and Communication,National University of Defense Technology

Field of Science and Technology:Sustainable energy and energy storage

ACADEMIC QUALIFICATION: degree and discipline (please indicate where appropriate)

Degree:	Bachelors		Masters		PhD	*	Other	
Discipline:					Electronic Science and Technology			

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Nomination Statement (up to 300 words): Please describe area of expertise in which the nominee has demonstrated innovation excellence. *Please provide the information in English.*

The research interests of Dr. Haipeng Li include metamaterials, metasurfaces, and their applications to novel antennas and multi-functional devices. He has authored over 11 peer-reviewed first-author papers in the *IEEE Transactions on Antennas and Propagation*, *Advanced Optical Materials*, *IEEE Antennas and Wireless Propagation Letters*, and *Progress in Electromagnetic Research*. The published academic researches have received extensive attention and positive reviews from domestic and foreign scholars, with a total of more than 400 citations, of which 2 papers were rated as highly cited papers (top 1%).

Innovative Project Statement (up to 300 words): Please provide brief information on the nominee's innovative idea. *Please provide the information in English.*

The current research interest of Dr. Li is the application of metasurfaces to ambient electromagnetic energy collection and backscatter communication. The research not only collects the abundant electromagnetic energy such as digital TV broadcast signals, WiFi signals, and cellular network signals in the urban environment, but also uses them as carrier waves for passive scattering communication to further reduce power consumption. The development of the research will effectively solve the bottleneck problems of low utilization efficiency of the limited spectrum resources, high energy consumption of sensor equipment, short battery life, and complex maintenance in the construction of smart cities. As a result, it will provide new methods for the realization of a new generation of Internet of Things with high spectral efficiency, low energy consumption and maintenance-free.

Participation in Innovation Competitions/Awards/Achievements: Please list previous participation in innovation competitions and awards/achievements, if any. *Please provide the information in English.*

The second prize and the third prize of Shaanxi Science and Technology Workers Innovation and Entrepreneurship Competition

DECLARATION BY THE CANDIDATE:

I hereby declare that all the information given above is true to the best of my knowledge. I accept to participate in the virtual conference of 1st SCO -Young Scientists Conclave in India, and will attend the entire programme of five days.

Place: Xi'an(China)

Date: 21/11/2020

Signature of the nominee: Haipeng Li

Name of the nominating authority:

(Contact details, i.e. telephone, email and designation)

Place: -----

Date: -----

Signature: -----

NB: Please remember to include the following along with Nomination Form:

- Nominee's Curriculum Vitae/Biography at the end of nomination form.

Haipeng Li was born in Guangshui, Hubei, China, in 1991. He received the B.S., M.S., and Ph.D. degrees in electromagnetic field and microwave technology from Air Force Engineering University, Xi'an, China, in 2013, 2015 and 2019, respectively. He is now an assistant professor at the College of Information and Communication, National University of Defense Technology. He is with the Youth Innovation Team of Shaanxi University lead by Dr. Haiyang Ding. Following is a list of his academic papers.

1. H-P. Li, G.-M. Wang, T. Cai, H. S. Hou, W. L. Guo. Wideband transparent beam-forming metadvice with amplitude- and phase- controlled metasurface. *Physical Review Applied*, vol. 11, no. 1, p. 014043, 2019.
2. H-P. Li, G.-M. Wang, T. Cai, J. G. Liang, X.J. Gao. Phase- and amplitude-control metasurfaces for antenna main-lobe and sidelobe manipulations. *IEEE Transactions on Antennas and Propagation*, vol. 66, no. 10, pp.5121-5129, 2018.
3. H-P. Li, G.-M. Wang, G. W. Hu, T. Cai, C. W. Qiu, H. X. Xu. 3D-Printed curved metasurface with multifunctional wavefronts. *Advanced Optical Materials*, p.2000129, 2020.
4. H-P. Li, G.-M. Wang, X.J. Gao, J. G. Liang, H. S. Hou. Novel metasurface for dual-mode and dual-band flat high-gain antenna application. *IEEE Transactions on Antennas and Propagation*, vol.66, no. 7, pp.3706-3711, 2018.
5. H.-P. Li, G.M. Wang, J. G. Liang, X. J. Gao, H. S. Hou, X. Y. Jia. Single-layer focusing gradient metasurface for ultrathin planar lens antenna application. *IEEE Transactions on Antennas and Propagation*, vol. 65, no. 3, pp. 1452-1457, 2017.
6. H.-P. Li, G. M Wang, T. Cai, and J. G Liang, H. S. Hou. X-band phase-gradient metasurface for high-gain lens antenna application. *IEEE Transactions on Antennas and Propagation*, vol. 63, no. 11, pp. 5144-5149, 2015.
7. H.-P. Li, G. M Wang, H.-X. Xu, T. Cai, and J. G Liang. Bifunctional circularly-polarized lenses with simultaneous geometrical and propagating phase control metasurfaces. *Journal of Physics D: Applied Physics*, vol. 52, p. 465105, 2019.
8. H.-P. Li, G.M. Wang, J.G. Wang and X.J. Gao. Wideband multifunctional metasurface for polarization conversion and gain enhancement. *Progress in Electromagnetic Research*, vol. 155, pp.115-125, 2016.
9. H.-P. Li, G.M Wang, X.-J. Gao, and L. Zhu. CPW-Fed Multiband Monopole Antenna Loaded with DCRLH-TL Unit Cell. *IEEE Antennas and Wireless Propagation Letters*, vol. 14, pp. 1243-1246, 2015.
10. H.-P. Li, G.M. Wang, X. J. Gao, J. G. Liang and H. S. Hou. An X/Ku-band focusing anisotropic metasurface for low cross-polarization lens antenna application. *Progress in Electromagnetic Research*, vol. 159, pp. 79-91, 2017.
11. H.-P. Li, G.M. Wang, L. Zhu, X. J. Gao, H. S. Hou. Wideband beam-forming metasurface with simultaneous phase and amplitude modulation. *Optics Communication*, p.124601, 2020.