Rational and Wide-range Tuning of CNT Aerogel Conductors with Multifunctionalities

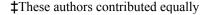
Min Li,‡^a Qian Gong,‡^b Pei Cao, ^b Han Wang,*^c Jian Qiao,^{a,b} Yingying Yu,^b Weibang Lu,^b Jiangtao Di,^b Zuoguang Zhang,^a Lianxi Zheng,*^d and Qingwen Li,*^b

^a Key Laboratory of Aerospace Advanced Materials and Performance (Ministry of Education), School of Materials Science and Engineering, Beihang University, Beijing 100191, China

^b Advanced Materials Division, Suzhou Institute of Nano-Tech and Nano-Bionics, Chinese Academy of Sciences, Suzhou 215123, China. Email: qwli2007@sinano.ac.cn

^c State Key Laboratory of Fluid Power and Mechatronic System, School of Mechanical Engineering, Zhejiang University, Hangzhou 310027, China. Email: wanghan3327@sina.com

^d Department of Mechanical Engineering, Khalifa University, Abu Dhabi 127788, United Arab Emirates. Email: lianxi.zheng@kustar.ac.ae



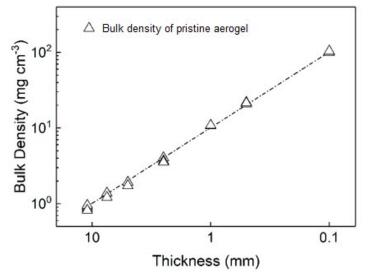


Fig. S1. The bulk density of pristine aerogel.

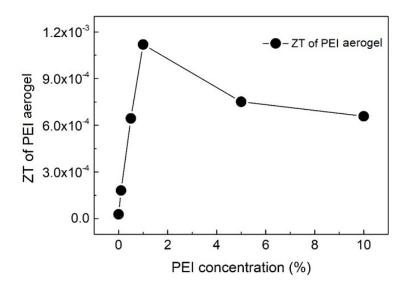


Fig. S2. Figure of merit (ZT) of the n-type aerogel coated with different PEI concentration.

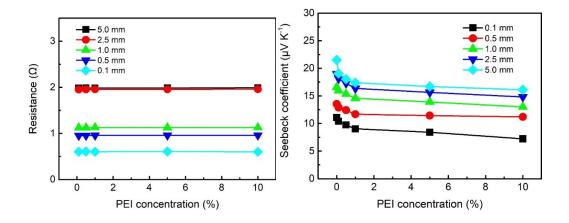


Fig. S3. Resistance and Seebeck coefficients of the CNT aerogel conductor with different PEI concentrations.

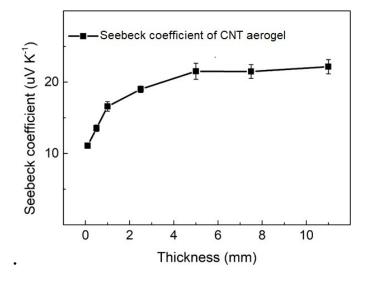


Fig. S4. Seebeck coefficient of the CNT aerogel conductor.

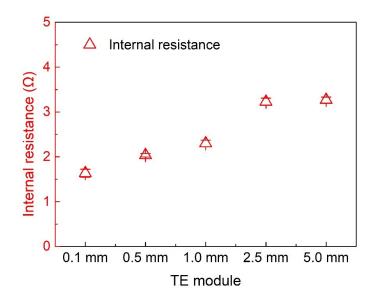


Fig. S5. The internal resistance of different TE modules.

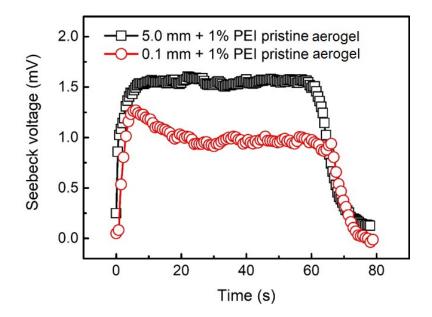


Fig. S6. The TE output Seebeck voltages changing according to time. (The temperature difference was removed after 60 sec)

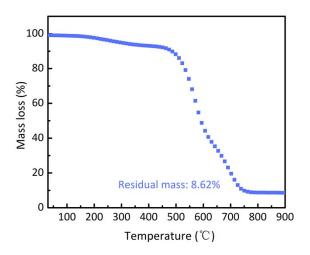


Fig. S7 Thermogravimetry(TG) curve of pristine CNT aerogel

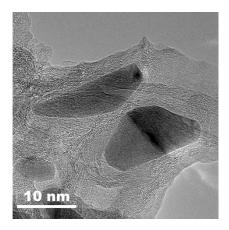


Fig.S8 The amorphous carbon around the catalyst changes to graphite phase