

Supporting Information for

Highly Thermo-Conductive Three-Dimensional Graphene Aqueous Medium

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Supplementary Figures and Table

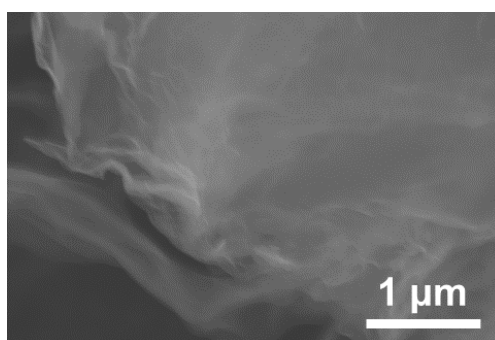


Fig. S1 SEM image of petal-like structure of GN

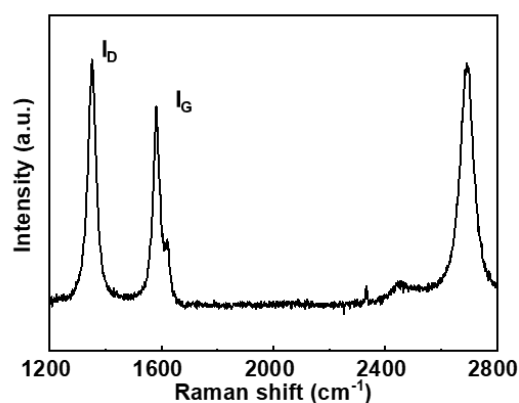


Fig. S2 Raman spectra of 3D-GS-CBF

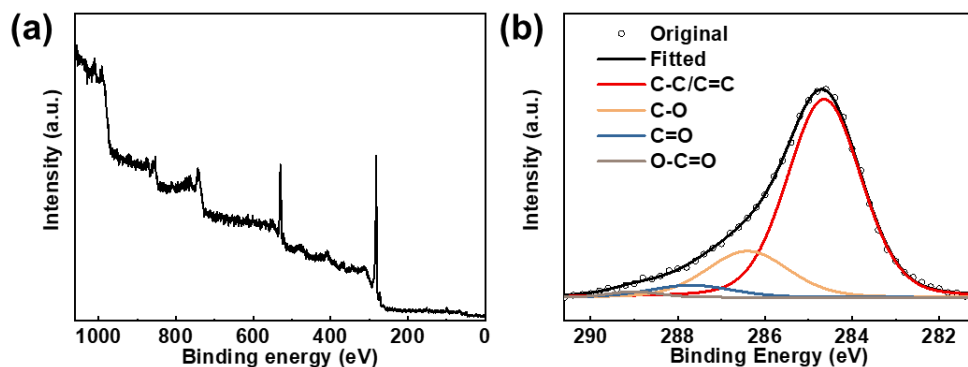


Fig. S3 **a** XPS survey spectra and **b** Gaussian line fitted C 1s spectra of 3D-GS-CBF

Table S1 Comparison of thermal conductivity of our work with previous studies

Filler	Fraction	k ($\text{W m}^{-1} \text{K}^{-1}$)	TCE (%)	TCEE (%)	References
BNNS	24 vol%	2.39	298	12.4	2018 [S1]
GNP	0.1 vol%	0.69	16.7	16.7	2018 [S2]
SWCNT	0.48 vol%	0.7	16.2	33.8	2016 [S3]
CuO	2 vol%	0.74	24	12	2016 [S4]
TiO ₂	1 vol%	1.0	67	67	2013 [S5]
BN	0.1 vol%	0.696	16.08	160.8	2016 [S6]
Cu nanowires	0.25 vol%	0.854	40	120	2017 [S7]
graphene nanoplatelets	0.44 vol%	0.72	20	200	2015 [S8]
BN nanofiller	6 vol%	1.54	157	26.2	2011 [S9]
MWCNT-SiO ₂ /Ag	0.1 vol%	0.642	7	70	2017 [S10]
FGNs	20 vol%	2.52	320	16	2019 [S11]
SWCNT	8 vol%	1.528	155	19.4	2017 [S12]
3D-GS-CBF	0.26 vol%	2.61	335	1300	This work

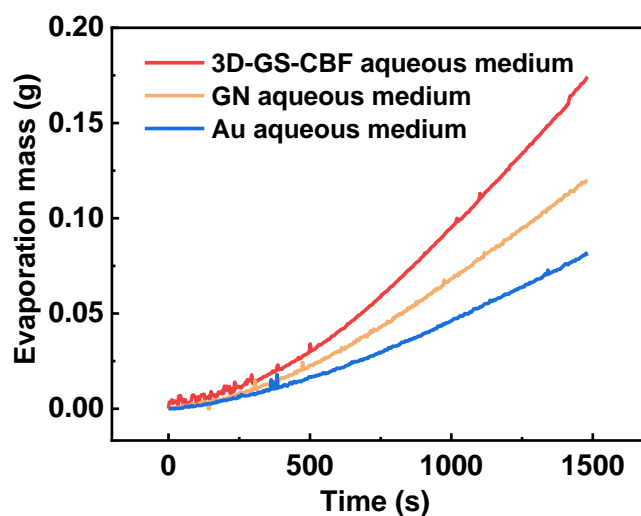


Fig. S4 Evaporation amount of different systems under 1 sun light intensity

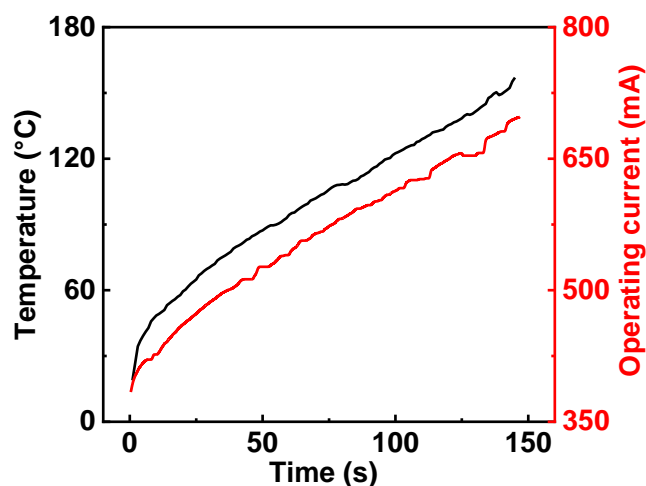


Fig. S5 Surface temperature and operating current of LEDs without thermal management

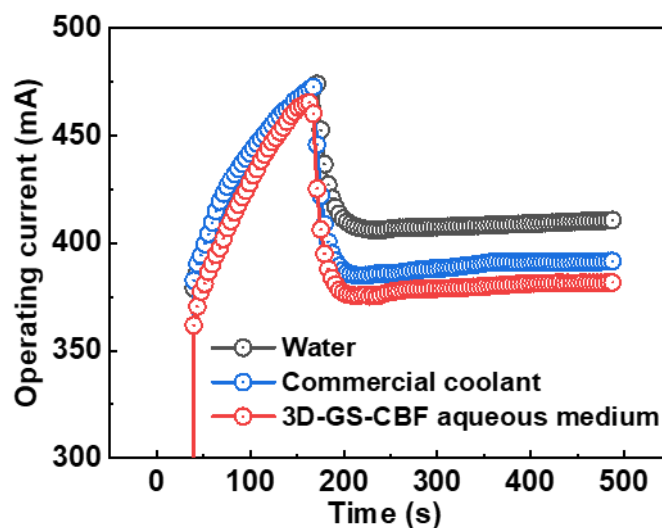


Fig. S6 Operating current of LEDs as a function of time under thermal management of water, commercial coolant and 3D-GS-CBF aqueous mediums

Supplementary References

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