MATERIALS

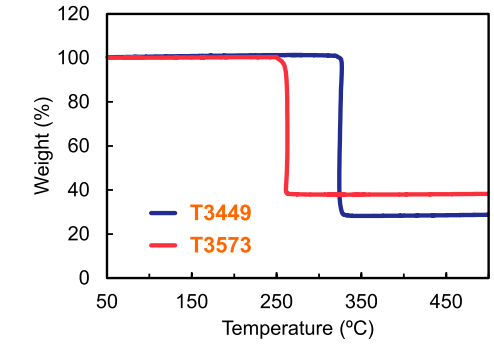
钙钛矿前体
碘化锡(II), 溴化锡(II)

SnI_2 Tin(II) Iodide
[for Perovskite precursor]
1g / 5g
[T3449]

$SnBr_2$ Tin(II) Bromide
[for Perovskite precursor]
1g / 5g
[T3573]

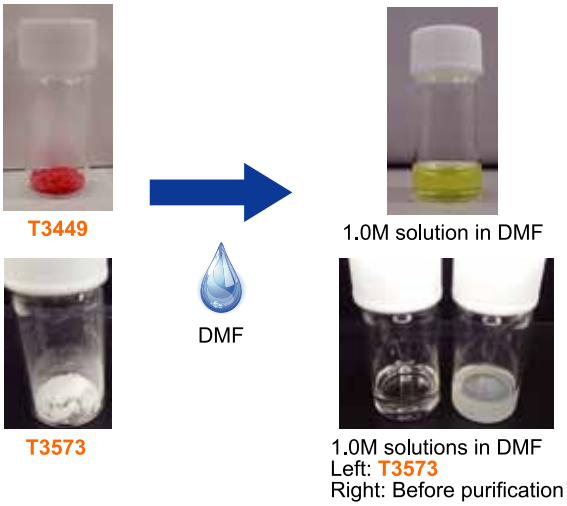
优势

- 高纯度结晶固体
- 极低的锡(Ⅳ)含量
- 提供澄清的DMF溶液
- 低含水量（T3449：水<100 ppm）



Thermogravimetric (TG) analysis of T3449 and T3573

- 由于不存在SnI_4，150℃左右时T3449无重量损失
- 基于SnI_2或$SnBr_2$的单个重量下降



- T3449 和 T3573 可以提供用于钙钛矿前体的澄清的DMF溶液

钙钛矿太阳能电池(PSC)的应用

SnI_2和$SnBr_2$已广泛应用于无铅或混合金属钙钛矿太阳能电池中。

Examples of solvent-coordinated tin halide complexes as tin perovskite precursors

1) M. Ozaki, Y. Shimakawa, Y. Kanemitsu, A. Saeki, A. Wakamiya, *et al.*, *ACS Omega* **2017**, *2*, 7016.

Examples of lead-free perovskite solar cell research

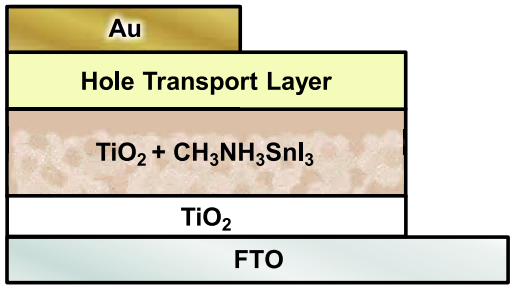
2) (PCE 11.5% $FA_{0.75}MA_{0.25}SnI_3$ in situ Sn(0) nanoparticle treatment) T. Nakamura, T. Sasamori, H. Ohkita, Y. Kanemitsu, A. Wakamiya, *et al.*, *Nat. Commun.* **2020**, *11*, 3008.

3) (PCE 9.0% $PEA_2FA_{24}Sn_{25}I_{76}$) S. Shao, J. Liu, G. Portale, H. Fang, G. R. Blake, G. H. ten Brink, L. J. A. Koster, M. A. Loi, *Adv. Energy Mater.* **2018**, *8*, 1702019.

Examples of mixed metal perovskite solar cell research

4) (PCE 14.8% $FA_{0.75}Cs_{0.25}Sn_{0.5}Pb_{0.5}I_3$ (single) 20.3%(tandem)) M. D. McGehee, H. J. Snaith, *et al.*, *Science* **2016**, *354*, 861

5) (PCE 21.4% $Cs_{0.1}FA_{0.6}MA_{0.3}Sn_{0.5}Pb_{0.5}I_3$ by maltol post-treatment) S. Hu, M. A. Truong, K. Otsuka, T. Handa, T. Yamada, R. Nishikubo, Y. Iwasaki, A. Saeki, R. Murdey, Y. Kanemitsu, A. Wakamiya, *Chem. Sci.* **2021**, *12*, 13513.



Typical device structure of lead-free perovskite solar cells

该材料是与Atsushi Wakamiya教授合作生产的。

钙钛矿前体：碘化锡(II)，溴化锡(II)

相关产品

阳离子 \ 阴离子	碘化物	溴化物	氯化物
Lead	L0279	L0288	L0291, L0292
Cesium	C2205	C2202	C2203
Bismuth	B5787	B6339	B3546
Methylammonium	M2556	M2589	M0138
Formamidinium	F0974	F0973	F0103
Acetamidinium	A2902	A3292	A0008
Guanidinium	G0450	G0449	G0162
Ethylammonium	E1045	E0056	E0205
Propylammonium	P2212	P2502	P0522
Isopropylammonium	-	I1041	I0166
Butylammonium	B4433	B5186	B0710
Isobutylammonium	I0935	I1007	I0096
tert-Butylammonium	B4434	B5187	-
Dimethylammonium	D4555	D5092	-
Diethylammonium	D4643	D4667	D0468
Imidazolium	I0970	I1006	-
Phenylammonium	A2778	A2985	-
Benzylammonium	B4566	B5185	B0407
2-Phenylethylammonium	-	-	-
5-Aminovaleric Acid	A2984	A3094	A0436

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