Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Supplementary information

1) Chemical analysis of Al-DEM-NO_2 (see[1]) and Y-DEM-NO_2 (see[2])

- Single crystal structure: (Fig. S1b)[1]
- MS (Fig. S2+3)[1]
- ^{27}Al-NMR (Fig. S4)[1]
- ^{13}C-NMR (Fig. S6)[1] + (Fig. S4)[2]
- Dept-NMR (Fig. S7)[1] + (Fig. S5)[2]
- ^{1}H-NMR (Fig. S8)[1] + (Fig. S3)[2]
- IR (Fig. S9)[1] + (Fig. S2a)[2]
- EA (exp. sec.)[1] + (exp. sec.)[2]
- TG (Fig. 1a)[1] + (Fig. 3a)[2]
- TG-DSC (Fig. 1b)[1] + (Fig. 3b)[2]
- TG-MS (Fig. 1c)[1] + (Fig. 4a)[2]
- TG-IR (Fig. 1d) + (Fig. 5a)[2]

2) Material analysis of Al_xO_y (see[1]) and Y_xO_y (see[2])

- XRD: (Fig.2a)[1] + (Fig.6a)[2]
- TEM: (Fig.2b)[1] + (Fig.6d)[2]
- IR: (Fig.3)[1] + (Fig.7a)[2]
- AFM: (Fig.4)[1] + (Fig.S17a)[2]
- XPS: (Fig.5)[1] + (Fig.8)[2]
- XRR: (Fig.S13)[1]

3) Electrical characterization of Al_xO_y (see[1]) and Y_xO_y (see[2]) thin-films

- Capacitance vs. frequency: (Fig.7a)[1] + (Fig.12a)[2]
- Current leakage density vs. electric field: (Fig.7b)[1] + (Fig.12b)[2]
- TFT transfer characteristics: (Fig.8a)[1] + (Fig.13a)[2]
- TFT output characteristics: (Fig.8b)[1] + (Fig.13b)[2]

1. **N. Koslowski, S. Sanctis, R. C. Hoffmann, M. Bruns and J. J. Schneider, *Journal of Materials Chemistry C*, 2019, 7, 1048-1056.**
2. **N. Koslowski, R. C. Hoffmann, V. Trouillet, M. Bruns, S. Foro and J. J. Schneider, *RSC Advances*, 2019, 9, 31386-31397.**