-MATERIAL
Organic Nano Electronic

1-Material Inc
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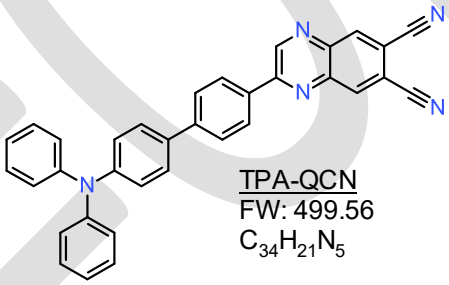
New Material tackles one of the biggest barriers to scaling artificial intelligence

Certificate of Analysis

1M Remark:	TPA-QCN (Triphenylamine–dicyanoquinoxaline), a TADF emitter with exceptional second-order optical nonlinearity
1M Material:	TPA-QCN
CAS No.:	2131049-03-9
Chemical Name:	2-(4'-(Diphenylamino)-[1,1'-biphenyl]-4-yl)quinoxaline-6,7-dicarbonitrile
Chemical Formula:	$C_{34}H_{21}N_5$
Molecular Weight:	499.56
Chemical Structure	

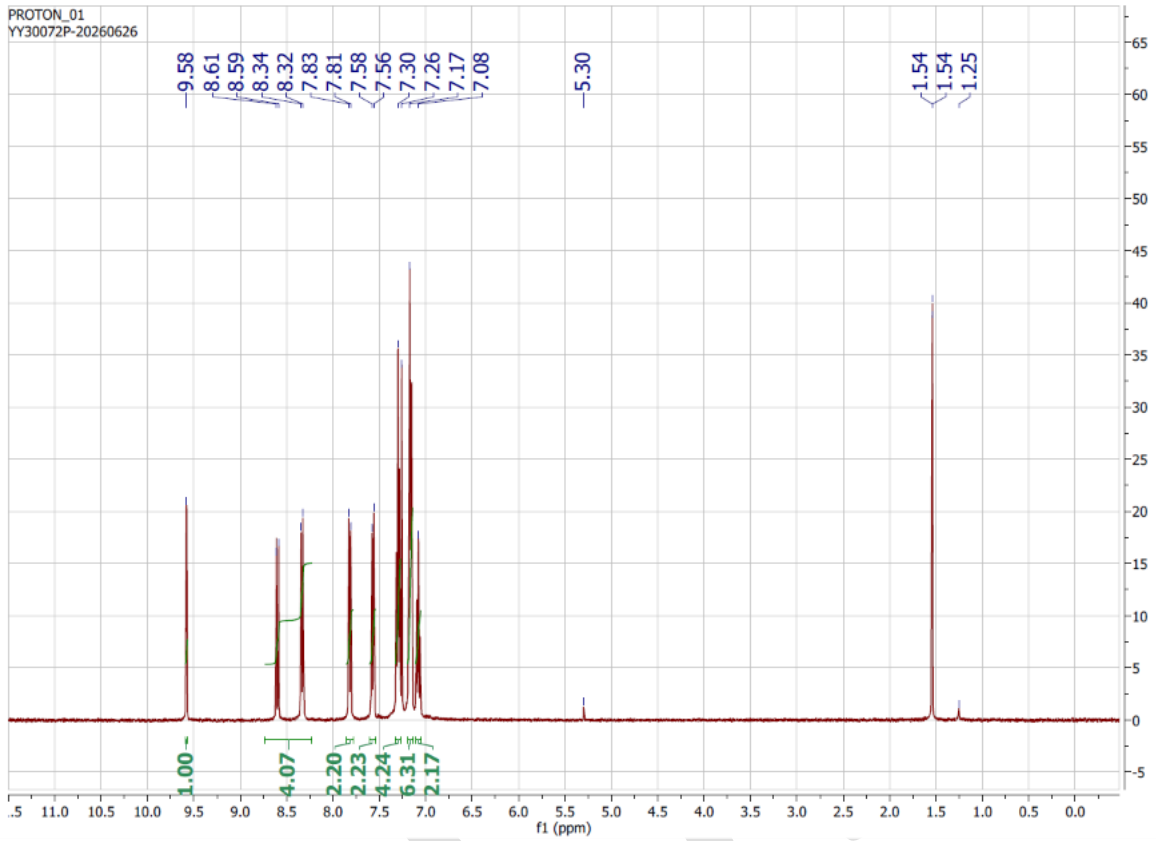


TPA-QCN
FW: 499.56
$C_{34}H_{21}N_5$

Lot No.	YY30072P
Appearance:	Red solid
Solubility:	Soluble $CHCl_3$, and selected organic solvents
Purity:	99% (NMR)

Application: A self-aligning organic film gives photonic chips new optical functions, reducing the need for extra conversion hardware.

NMR (internal reference)



Breakthrough story of TPA-QCN from Montreal

P.-L. Thériault et al., *Sci. Adv.*, 12, eaeg3170 (2026)

Polytechnique Montréal Team Addresses Major Challenge in Scaling Artificial Intelligence – BioTechGrid

Organic thin film brings second-order optical nonlinear effects to silicon photonics | Laser Focus World

Publications: