

# Supplementary Materials

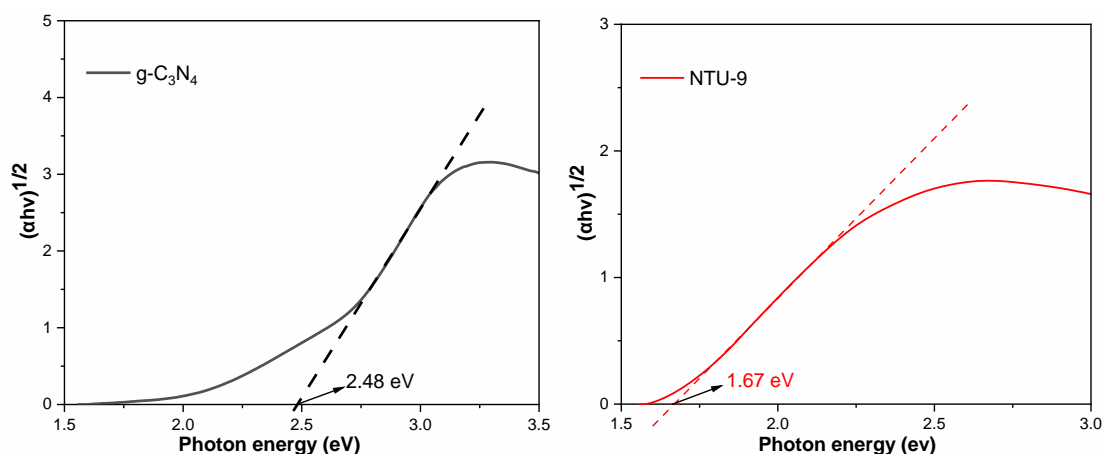
## Design and synthesis of NTU-9/C<sub>3</sub>N<sub>4</sub> photocatalysts: effects of NTU-9 content and composite preparation method

Damian Makowski<sup>1</sup>, Wojciech Lisowski<sup>2</sup>, Mateusz Baluk<sup>1</sup>, Tomasz Klimczuk<sup>3</sup>, Beata Bajorowicz<sup>1</sup>

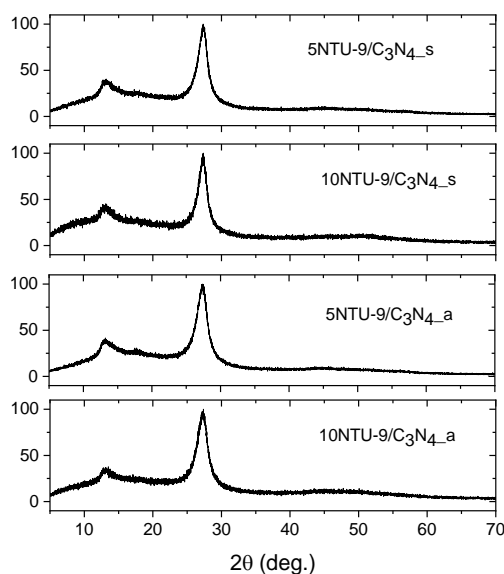
<sup>1</sup> Department of Environmental Technology, Faculty of Chemistry, University of Gdansk, 80-308, Gdansk, Poland

<sup>2</sup> Institute of Physical Chemistry, Polish Academy of Sciences, 01-224 Warsaw, Poland

<sup>3</sup> Department of Solid State Physics, Faculty of Applied Physics and Mathematics, Gdansk University of Technology, 80-233 Gdansk, Poland



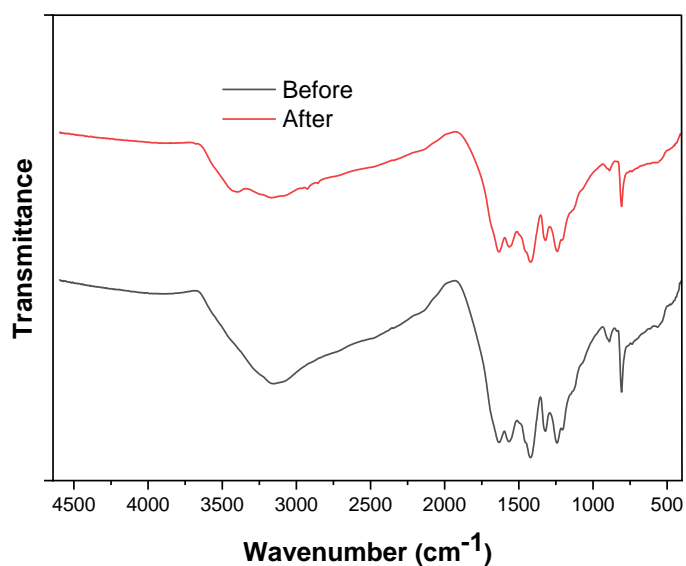
**Figure S1.** Tauc plots of (a) g-C<sub>3</sub>N<sub>4</sub> and (b) NTU-9.



**Figure S2.** Powder XRD patterns for NTU-9/C<sub>3</sub>N<sub>4</sub> hybrid materials.

**Table S1.** Chemical characters of titanium and oxygen identified in Ti 2p and O1s XPS spectra, respectively, recorded for pristine NTU-9 and C<sub>3</sub>N<sub>4</sub> composites and their mixtures prepared by solvothermal method (\_s) and calcination under air (\_a).

Sample	Ti 2p <sub>3/2</sub> fraction							O 1s fraction						
	Ti(4+)			Ti(3+)		Satellite (S)		A (Ti-O <sub>x</sub> )		B (C=O)		C (-OH)		A/B
	BE eV	FW HM eV	%	BE eV	%	BE eV	%	BE eV	(%)	BE eV	%	BE eV	%	
NTU-9	459.2	1.93	95.94	0	0	462.2	4.06	530.7	15.28	532.0	74.79	533.4	9.93	0.20
C <sub>3</sub> N <sub>4</sub>	-	-	-	-	-	-	-	0	0	532.0	100	0	0	0.00
5NTU-9/C <sub>3</sub> N <sub>4</sub> _s	459.3	1.86	92.92	0	0	461.7	7.02	531.0	22.40	532.2	63.53	533.8	14.07	0.35
10NTU-9/C <sub>3</sub> N <sub>4</sub> _s	459.4	1.80	95.83	0	0	462.2	4.17	531.0	28.61	532.3	58.49	533.6	12.90	0.49
15NTU-9/C <sub>3</sub> N <sub>4</sub> _s	459.3	1.79	95.93	0	0	462.3	4.08	530.9	24.43	532.2	65.89	533.5	9.69	0.37
5NTU-9/C <sub>3</sub> N <sub>4</sub> _a	458.8	1.33	95.58	456.9	4.42	0	0	530.3	52.68	531.8	31.72	533.1	15.60	1.66
10NTU-9/C <sub>3</sub> N <sub>4</sub> _a	459.0	1.34	94.21	457.2	3.68	461.2	2.11	530.4	67.24	531.6	21.97	532.6	10.79	3.06
15NTU-9/C <sub>3</sub> N <sub>4</sub> _a	459.2	1.36	84.40	457.3	4.05	461.2	11.55	530.6	66.92	532.0	25.78	533.4	7.30	2.60



**Figure S3.** FTIR spectra of the most active sample: 15NTU-9/C<sub>3</sub>N<sub>4</sub>\_s before and after photocatalytic process.