Table S2. Comparison table of Cu based glucose sensors

Senor type	LOD (μM)	Dynamic range (mM)	Ref.
Cu_2O+CuO/Ni	1000	1–8	[1]
Pt/PANi NWs@Cu	94.0	0.5–50	[2]
Cu_xS_y	200	0.2–16	[3]
PACS	160	2–18	[4]
Cu-MOF/PtNPs/GE	60	0.40–25.00	[5]
Cu/ZnO	69	0.01–1, 1–7	[6]
CuNOx@ 280°C	135.39	0.05–1.00	[7]
CoMnP@Co3O4/CuO fiber microelectrode	11.42	0.001– 0.55 and 0.55–3.03	[8]
LIG/CuNPs	11	20 μM –1.79 mM	[9]
CuO NPs	100	1–10	[10]
Cu(II)/rGO/SPCE	65	0.10–12.5	[11]
Cu–Cu_2O NPs@3DG	16.0	0.8–10	[12]
PDDA/CuO-C-dot on SPCE	200	0.5–2, 2–5	[13]
Pd-Cu BMA	43.4	1–20	[14]
CuO/CNFs	350	2–10	[15]
Cu MOF	19	1–15	[16]
CSCuCNT	11.9	0.031-1	This work

PANi NWs - Nanostructured polyaniline nanowires, Cu_xS_y - Cu-based nanomaterials, copper sulfide, PACS - polyaniline-stabilized Cu_2S nanoparticles, Cu-MOF - copper-based metal-organic framework, NPs – nanoparticles, GE - gold electrode, CuNOx @ 280°C – Cu native oxide annealed at 280°C, LIG - laser-induced graphene, rGO - reduced graphene oxide, SPCE - screen-printed carbon electrode, 3DG - three-dimensional graphene, PDDA - poly-(dimethyldiallylammonium chloride), BMA – bimetallic aerogels, CNF – carbon nano fiber

REFERENCES

[1] G. Martínez-Saucedo, M. Ugalde-Reygadas, J. J. A. Peña, G. Lastra-Medina, J. Márquez-Marín, G. Torres-Delgado, R. Castanedo-Pérez, and I. R. Chávez-Urbiola, Surf. Interfaces, 2023, 37, 102702.

[2] L. T. Tran, H. V. Tran, T. T. T. Nguyen, and C. D. Sai, Synth. Met., 2023, 297, 117388.

[3] P. Tetyana, N. Mphuthi, A. N. Jijana, N. Moloto, P. M. Shumbula, A. Skepu, L. S. Vilakazi, and L. Sikhwivhilu, Nanomaterials, 2023, 13(3), 481.

[4] C. Saha, P. Kumari, M. Hazarika, I. Waziri, and K. Mallick, New J. Chem., 2025, 49(35), 15504–15516.

[5] X. Chen, X.-Z. Feng, T. Zhan, Y.-T. Xue, H.-X. Li, G.-C. Han, Z. Chen, and H.-B. Kraatz, Sens. Actuators B Chem., 2023, 395, 134498.

[6] A. El Golli, M. Echabaane, and C. Dridi, Mater. Chem. Phys., 2022, 280, 125844.

[7] M. M. Alam and M. M. R. Howlader, Anal., 2024, 149(3), 712–728.

[8] L. Naderi and S. Shahrokhian, Chem. Eng. J., 2023, 456, 141088.

[9] T. Pinheiro, J. Caetano, E. Fortunato, M. G. F. Sales, H. Almeida, and R. Martins, Adv. Sens. Res., 2024, 3(11), 2400052.

[10] P. M. Y. Ansari, R. M. Muthukrishnan, R. I. Khan, C. Vedhi, and S. M. A. Kader, Appl. Phys. A: Mater. Sci. Process., 2023, 129(11), 743.

[11] S. Phetsang, P. Kidkhunthod, N. Chanlek, J. Jakmunee, P. Mungkornasawakul, and K. Ounnunkad, Sci. Rep., 2021, 11(1), 9302.

[12] Z. Khosroshahi, F. Karimzadeh, M. Kharaziha, and A. Allafchian, Mater. Sci. Eng. C, 2020, 108, 110216.

[13] T. Sridara, J. Upan, G. Saianand, A. Tuantranont, C. Karuwan, and Jakmunee, Sensors, 2020, 20(3), 808.

[14] Z. Li, M. Jiang, D. Lu, Y. Wang, H. Li, W. Sun, J. Long, I. Jeerapan, J. L. Marty, and Z. Zhu, Talanta, 2025, 287, 127641.

[15] A. Mohammadpoor, S. Sajjadi, M. Rasouli, and A. H. Keihan, J. Appl. Biotechnol. Rep., 2024, 11(4), 1461–1470.

[16] D. Kumari, M. Prajapati, and C. R. Kant, ECS J. Solid State Sci. Technol., 2024, 13(4), 047007.