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LIST OF ABBREVIATIONS AND SYMBOLS

MOSFET	Metal Oxide Semiconductor Field Effect Transistor
ISFET	Ion Sensitive Field Effect Transistor
ENFET	Enzyme Field Effect Transistor
CNT	Carbon Nanotube
MWCNT	Multi walled CNT
SWCNT	Single walled CNT
G-ENFET	Graphene ENFET
CNT-ENFET	Carbon Nanotube ENFET
CNT-DG-ENFET	Carbon Nanotube Dual Gated ENFET
ITO	Indium Tin Oxide
POC	Point of Care
CVD	Catalytic Vapor Deposition
ELR	Extrapolation in Linear Region
DMM	Digital Multimeter
PBS	Phosphate Buffer Saline
ECD	Electrochemical Deposition
RE	Reference Electrode
WE	Working Electrode
CE	Counter Electrode
PEI	Polyethylene imine
PPy	Polypyrrole
ChOx	Cholesterol Oxidase
ACh	Acetylcholine
AChE	Acetylcholine Esterase
PDMS	Polydimethylsilaxane
Ag/AgCl	Silver/Silver chloride
SS	Subthreshold Swing
E	Enzyme
S	Substrate
P	Product
ES	Enzyme substrate intermediate

ZnO	ZnO
ZrO_2	Zirconium Dioxide
HfO_2	Hafnium Dioxide
CH	Chitosan
NiO	Nickel Oxide
H_2O_2	Hydrogen peroxide
KOH	Potassium hydroxide
KCl	Potassium chloride
NH_4OH	Ammonium hydroxide
$ZrCl_4$	Zirconium tetrachloride
$Zn(CH_3COO)_2$	Zinc acetate
SiO_2	Silicon dioxide
Al	Aluminium
Pt	Platinum
ρ_s	Density of substance to be deposited
M_s	Mass of substance to be deposited
A_s	Area of sensing film
I_{DS}	Drain to source current
V_{DS}	Drain to source voltage
V_{TH}	Threshold voltage
μ	Mobility of the channel
W	Width of the channel
L	Length of the channel
C_{ox}	Oxide capacitance
A	Area of capacitor
Φ_M	Work function of gate material
Φ_S	Work function of semiconductor
q	Elementary charge
k	Boltzmann constant
Q_{ox}	Oxide charge of MOSFET
Q_{ss}	Fixed surface charge of MOSFET
Q_B	Bulk semiconductor charge of MOSFET
Φ_f	Fermi potential of semiconductor

$2\Phi_f$	Channel inversion potential
ψ_0	Surface potential at the oxide electrolyte interface
E_{ref}	Interfacial potential
χ_{sol}	Dipole potential of solvent
V_T	Thermal voltage
I_{SubTH}	Subthreshold current
T	Temperature
κ	Dielectric constant
ε_0	Permittivity of free space
t_{ox}	Oxide thickness
K_M	Michaelis Menten constant
K_a	Acidic equilibrium constant
K_b	Basic equilibrium constant
N_S	Number of sites
β	Dimensionless sensitivity parameter
C_{eq}	Equivalent capacitance
pH_{pzc}	pH at the point of zero charge
D	Diffusion Coefficient
d	Diameter of CNT
a	Lattice distance
$V_{pp\pi}$	C-C tight binding overlap energy
a_{c-c}	Nearest neighbor distance between C-C bonds
E_g	Energy band gap
a_M	Maximal enzyme activity for one enzyme unit
n_{enz}	Number of enzymatic units per volume unit
x	Diffusion length
L_e	Length of enzymatic layer
t	Time
K_e	Water ionic product
η	Viscosity of fluid
ρ	Fluid volumic mass
N_{AV}	Avogadro’s number

A_f	Fluid dependent constant.
M	Molar mass of the molecule under study
W	Channel width
L	Channel length
r_j	Source/drain region's radius of curvature
W_d	Width of the depletion region
L_t	Length of the channel region in contact with the gate oxide
V_{PT}	Punch through voltage
v_{sat}	Carrier saturation velocity