

SYNTHESIS AND CHARACTERIZATION OF SOME ORGANOMETALLOGELS AND THEIR APPLICATIONS



Thesis submitted in the partial fulfillment for the
Award of Degree

Doctor of Philosophy

By

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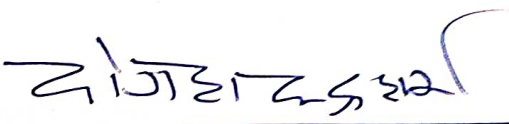
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Dedicated to My Beloved
PARENTS

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**List of
Symbols/Abbreviations**

UHV	ultra-high vacuum
et al.	Co-authors
ALA	Allylamine
TMA	Trimesic acid
Eg	Optical band gap
ESI-MS	Electrospray Ionization Mass Spectrometry
SCLC	Space charge limited current
SBH	Schottky-Barrier height
SBDs	Schottky Barrier diodes
MS	Metal-semiconductor
TCO	Transparent conducting oxide
SE	Secondary electrons
CL	Cathode-luminescence
BSE	Back-scattered electrons
UHV	Ultra-high vacuum
d	Interplanar spacing
λ	Wavelength
AR grade	Analytical Research Grade
DNA	Deoxyribonucleic acid

*List of
Symbols/Abbreviations*

RNA	Ribonucleic acid
3D	3-dimensional
ACN	Acetonitrile
LMWG	Low molecular weight gelator
ITO	Indium tin oxide
AFM	Atomic force microscopy
MGC	Minimum gelation concentration
MOF	Metal-organic framework
DEE	Diethyl ether
NMR	Nuclear magnetic resonance
DFS	Differential frequency sweep
DME	1,2-dimethoxyethane
RT	Room temperature
DMF	N,N'-dimethylformamide
s	Second
DMSO	Dimethyl sulfoxide
S	Solution
DOX	1,4-dioxane

**List of
Symbols/Abbreviations**

SOFC	Solid oxide fuel cells
AIE	Aggregation Induced Emission
PUIA	5-(3-(pyridin-3-yl) ureido isophthalic acid
SEM	Scanning electron microscopy
DSC	Differential scanning calorimetry
TEM	Transmission electron microscopy
EDAX	Energy-Dispersive X-Ray Spectroscopy
T _d Gel	Destruction temperature
FT-IR	Fourier transform infrared
T _{gel}	Sol-gel transition temperature
PET	Photoinduced Electron Transfer
THF	Tetrahydrofuran
LED	Light-emitting diode
G'	Storage modulus
wt. %	Percent by weight
G''	Loss modulus
LCP	Left-handed circularly polarized light
RCP	Right-handed circularly polarized light
CD	Circular dichroism