Electronic Supplementary Material (ESI) for RSC Advances.

Synthesis Through 3D printing: Formation of 3D Coordination Polymers

Oded Halevi[a,b,c], Jingwei Chen[b,c], Gurunathan Thangavel[b], Samuel Alexander Morris[b], Tal Ben Uliel[d], Yaakov Raphael Tischler[d], Pooi See Lee[b,c*], Shlomo Magdassi[a,c*]

[a] Casali Center for Applied Chemistry, Institute of Chemistry, The Hebrew University of Jerusalem, Jerusalem, 91904, Israel. E-mail: magdassi@mail.huji.ac.il

[b] School of Materials Science and Engineering, Nanyang Technological University, 639798, Singapore. E-mail: pslee@ntu.edu.sg

[c] Singapore-HUJ Alliance for Research and Enterprise (SHARE), Nanomaterials for Energy and Energy-Water Nexus (NEW), Campus for Research Excellence and Technological Enterprise (CREATE), Singapore 138602.

[d] Department of Chemistry, Bar-Ilan University, Ramat-Gan, 5290002, Israel.

Table S1. Crystallographic data and data collection parameters for $[Ni(AAm)_4(H_2O)_2](NO_3)_2$

Formula	$C_{12}\ H_{24}\ N_6\ Ni\ O_{12}$
M	503.04
T (K)	296(2)
λ (Å)	0.71073
Crystal system	Triclinic
Space group	$P\bar{1}(\underline{2})$
a (Å)	7.3043(5)
b (Å)	8.8329(6)
c (Å)	9.7206(7)
α (°)	65.294(3)
β (°)	70.106(3)
γ (°)	79.466(3)
V (Å^3)	535.14(7)
Z	1
$\rho_{calcd.}$ (Mg/m^3)	1.561
μ (mm^{-1})	0.977
Range of 2θ (°)	2.41-34.368
Total reflection	43507
Independent reflection (R_{int})	4466 [R(int) = 0.0246]
Data / restraints/ parameters	4466 / 30 / 191
Final R Indicies (all data)	R1 = 0.0353, wR2 = 0.0881
Final R Indicies (I >2sigma(I))	R1 = 0.0300, wR2 = 0.0819

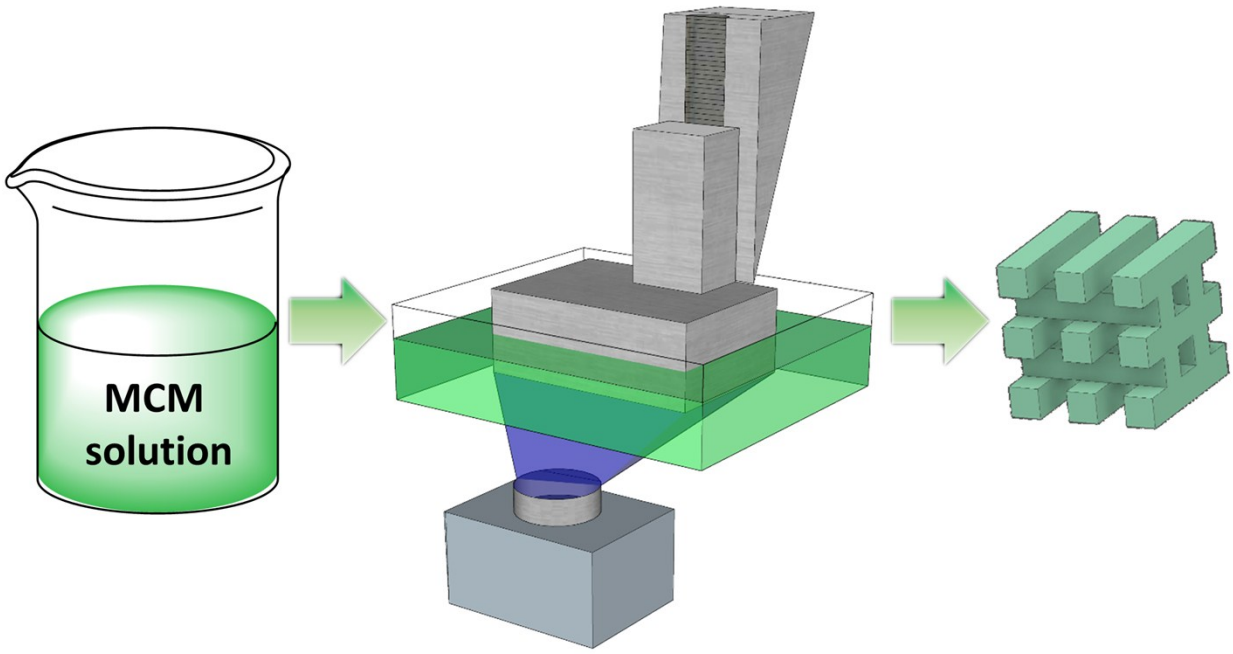

Figure S1. A scheme of the 3D-Printing of PolyNiComplex by DLP.

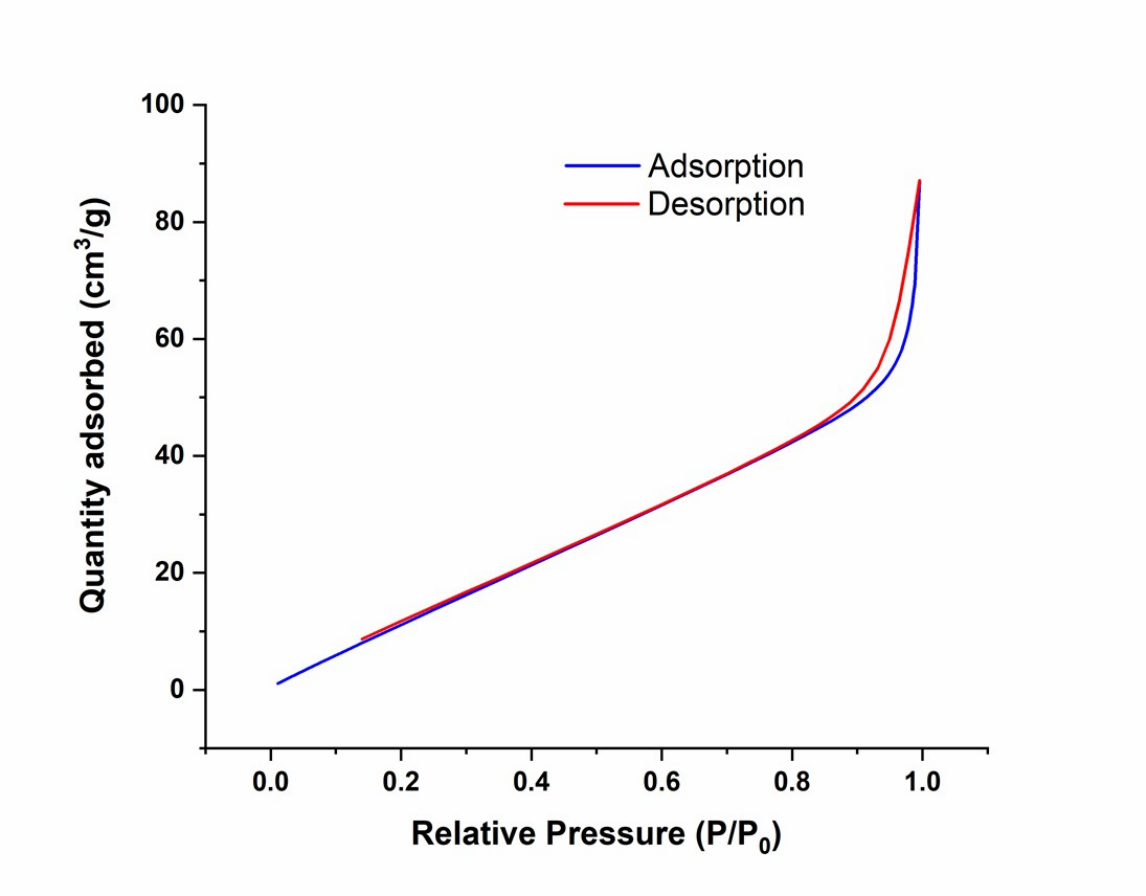

Figure S2. Nitrogen adsorption-desorption isotherm of the grinded polyNiComplex.

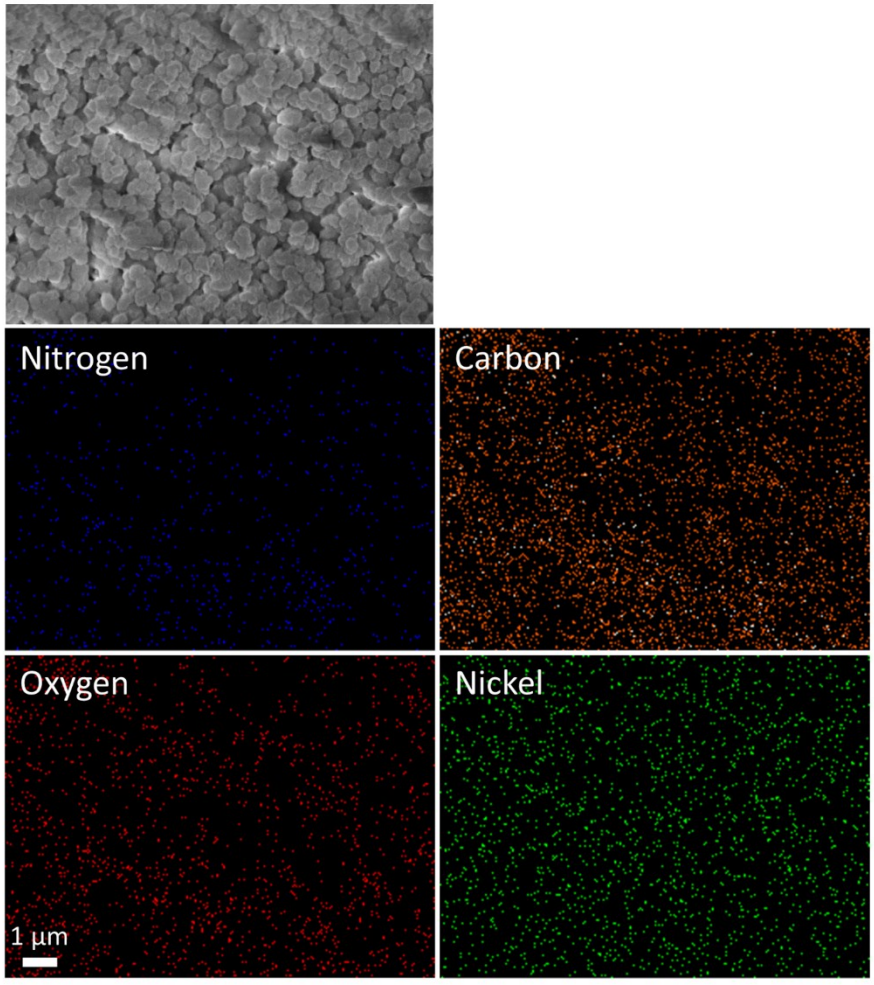

Figure S3. EDX measurement of the printed PolyNiComplex.

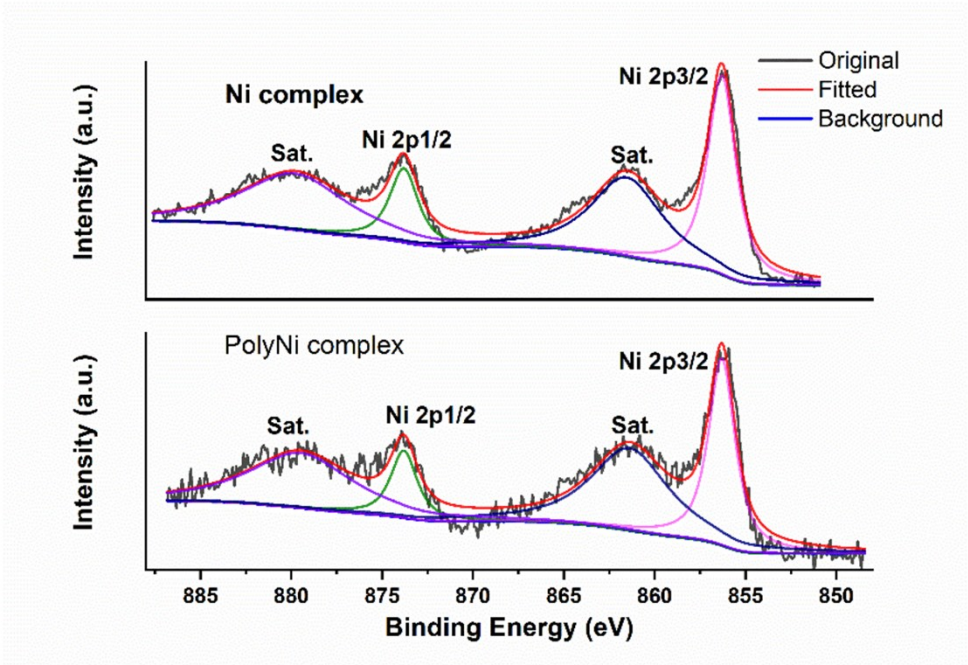

Figure S4. XPS of Ni complex and polyNiComplex.

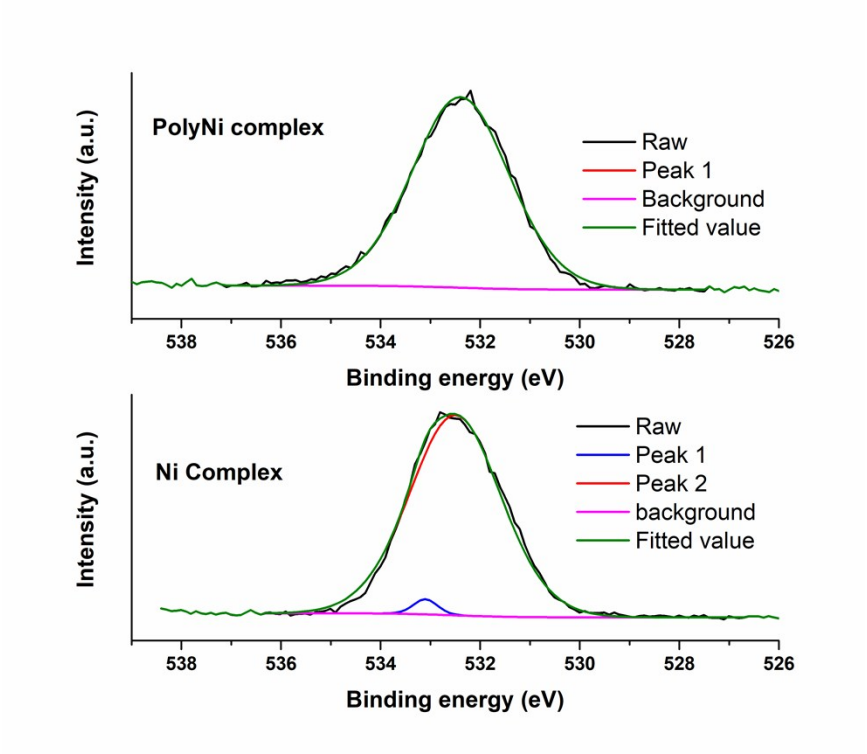

Figure S5. O 1s spectra before and after polymerization.

In the upper graph, peak 1 curve is overlapped by the fitted value curve.

Table S2. Printing parameters for 3D printing of polyNiComplex.

Parameter	Value
Light Intensity	39.880 [mW/cm^2]
Slice thickness	0.025 [mm]
Burn-In Exposure Time	5.000 [s]
Exposure Time	1.200 [s]
Separation Velocity	0.200 [mm/s]
Separation Distance	1.000 [mm]
Approach Velocity	0.500 [mm/s]
Slides Per Layer	1.000
Slide Velocity	10.000 [mm/s]
Burn-In Wait Time (After Exposure)	1.000 [s]
Burn-In Wait Time (After Separation)	1.000 [s]
Burn-In Wait Time (After Approach)	0.000 [s]
Burn-In Wait Time (After Slide)	0.000 [s]
Normal Wait Time (After Exposure)	1.000 [s]
Normal Wait Time (After Separation)	1.000 [s]
Normal Wait Time (After Approach)	0.000 [s]
Normal Wait Time (After Slide)	0.000 [s]