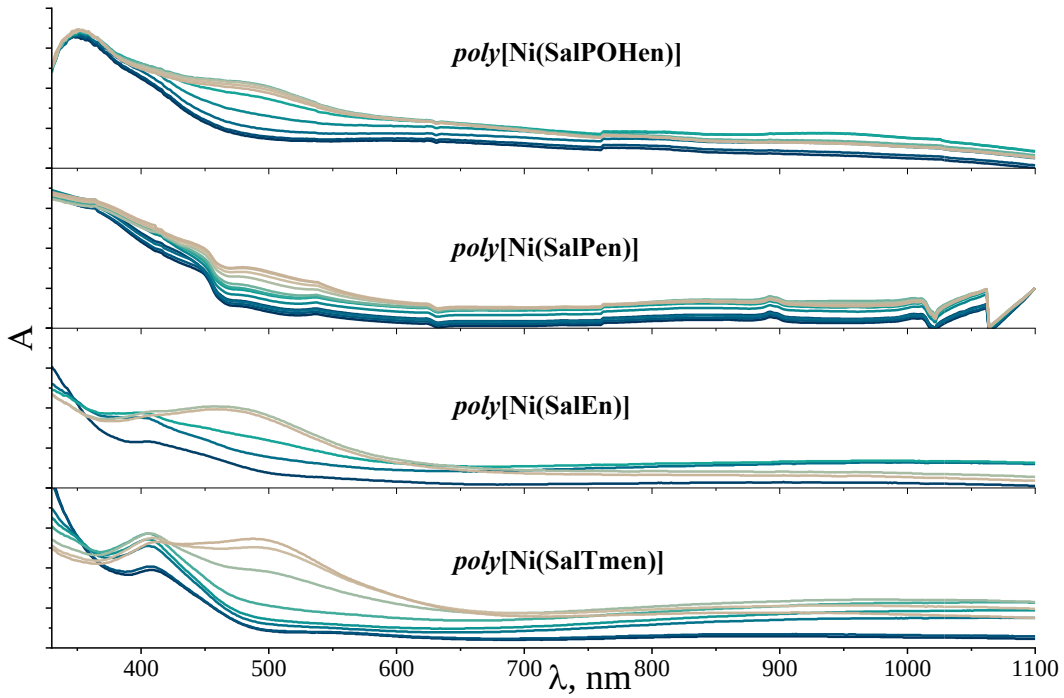


Figure S1. *Operando* UV-Vis spectra of the studied polymers.

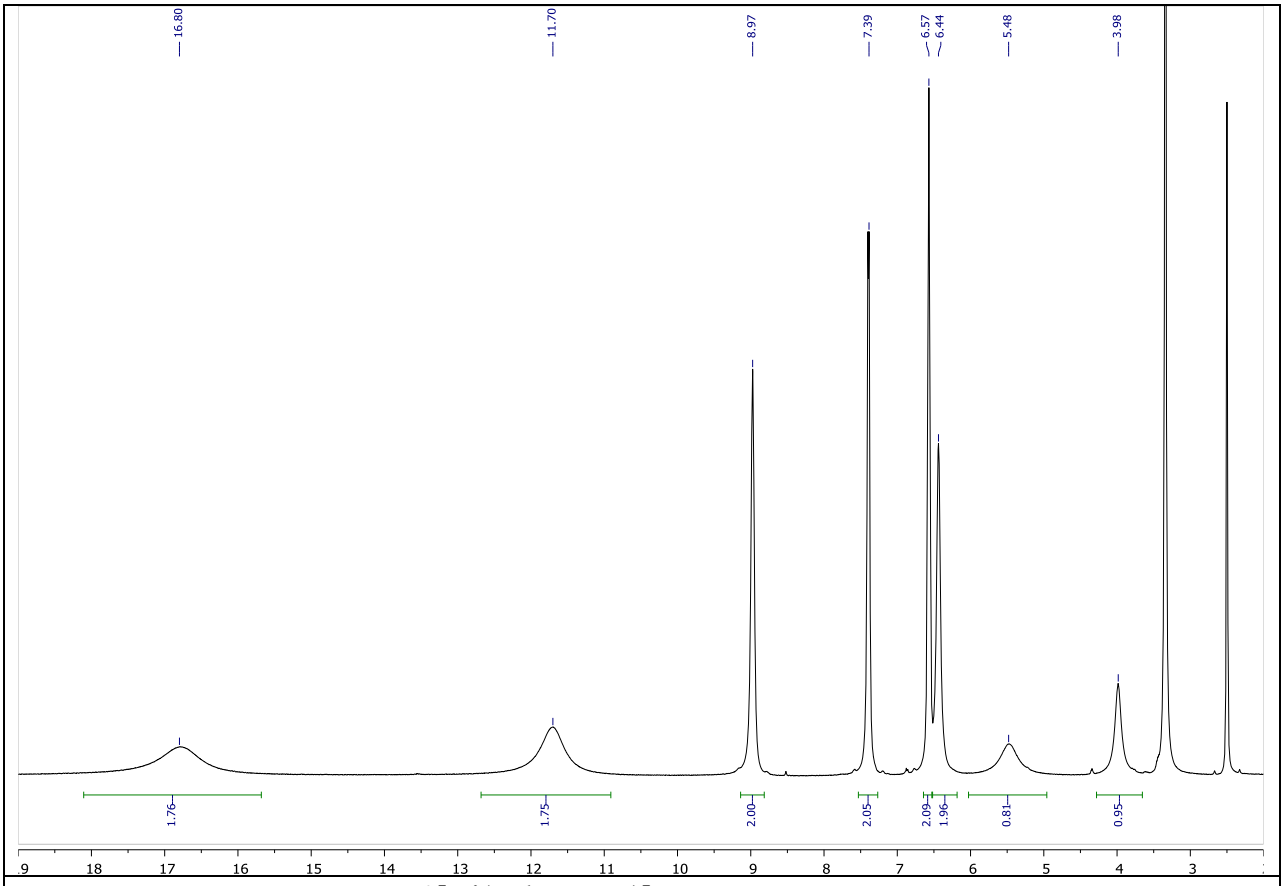


Figure S2. ^{1}H NMR spectrum of **[Ni(SalPOHen)]**

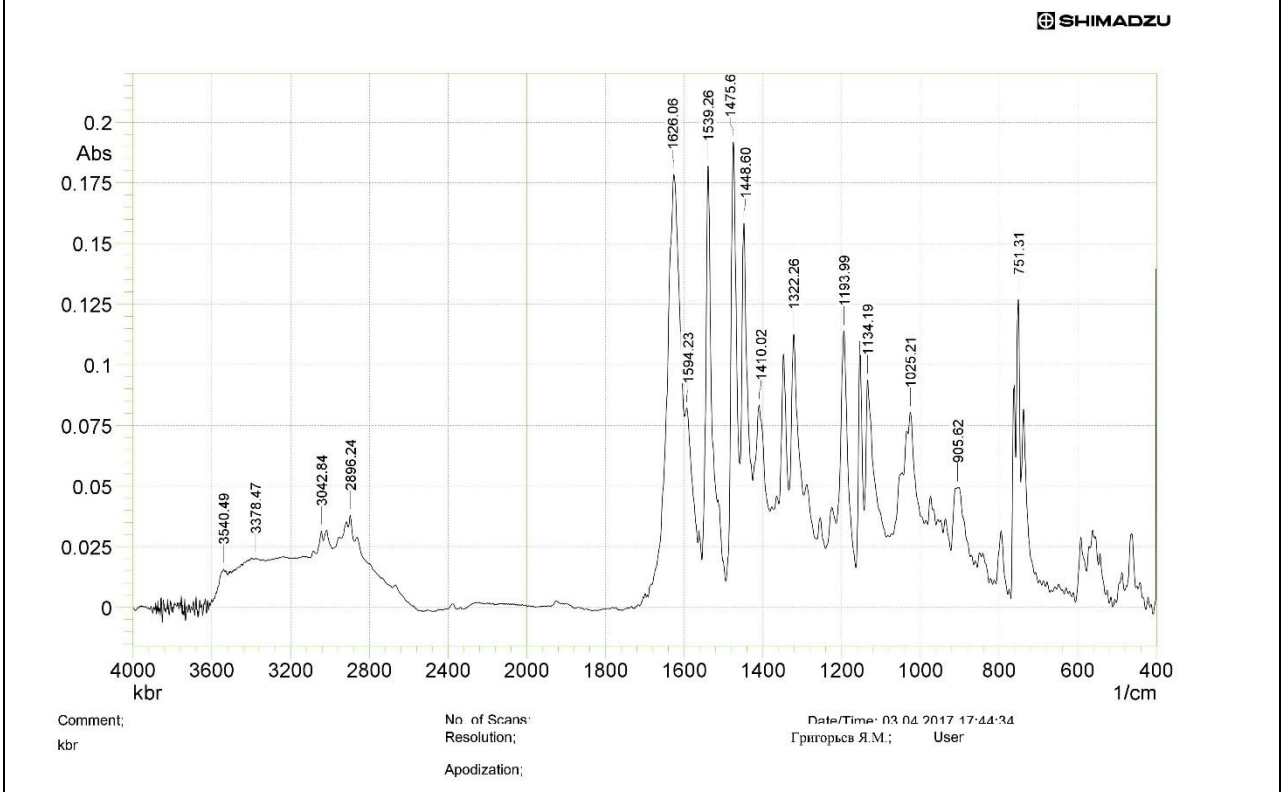


Figure S3. FTIR spectrum of **[Ni(SalPOHen)]**

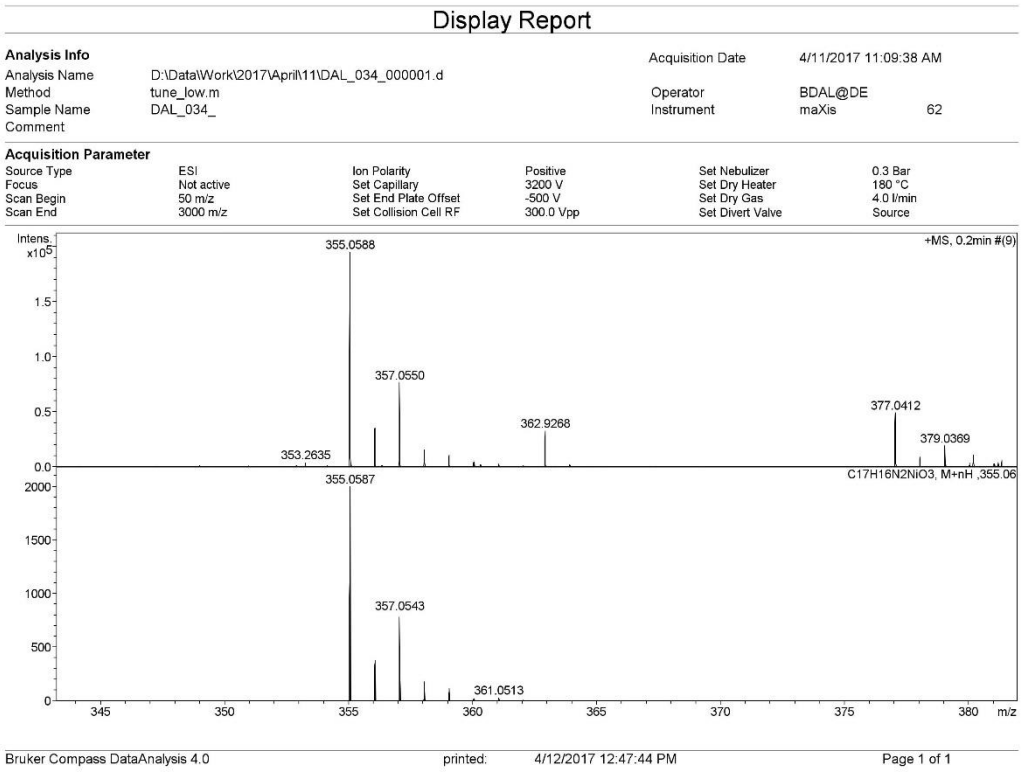
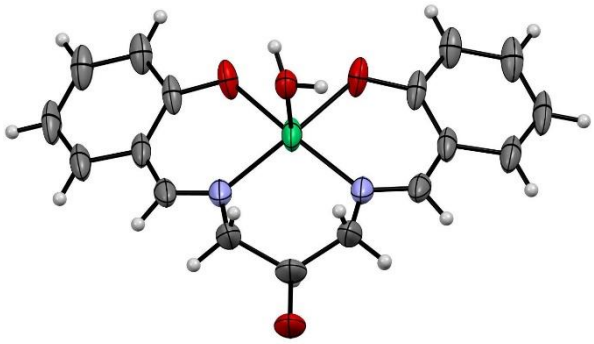


Figure S4. HRMS spectrum of **[Ni(SalPOHen)]**

Crystallographic data for [Ni(SalPOHen)]

X-ray single crystal analysis were performed on Agilent Technologies «Supernova» diffractometer with monochromated Mo Kα radiation. Crystal was measured at the temperature of 100 K. The structure has been solved by the Superflip[50–52] and ShelXS[53] structure solution programs using Charge Flipping and Direct Methods, respectively, and refined with the ShelXL[54] refinement incorporated in the OLEX^2 program package[55]. CCDC 1875699 contains the supplementary crystallographic data for this paper. These data can be obtained free of charge from The Cambridge Crystallographic Data Centre via http://www.ccdc.cam.ac.uk.



Crystal Data for $C_{34}H_{30}N_4Ni_2O_3$ (M =740.04 g/mol): orthorhombic, space group Pnma (no. 62), a = 8.6387(8) Å, b = 23.9590(19) Å, c = 7.5179(6) Å, V = 1556.0(2) Å^3, Z = 2, T = 100(1) K, μ(MoKα) = 1.271 mm^{-1}, *Dcalc* = 1.579 g/cm$_3$, 6890 reflections measured (7.38° ≤ 2Θ ≤ 47.5°), 1824 unique (R_{int} = 0.0741, R_{sigma} = 0.1142) which were used in all calculations. The final R_1 was 0.0695 (I > 2σ(I)) and wR_2 was 0.1692 (all data).
CCDC 1503103

Figure S5. ORTEP plot of **[Ni(SalPOHen)]**