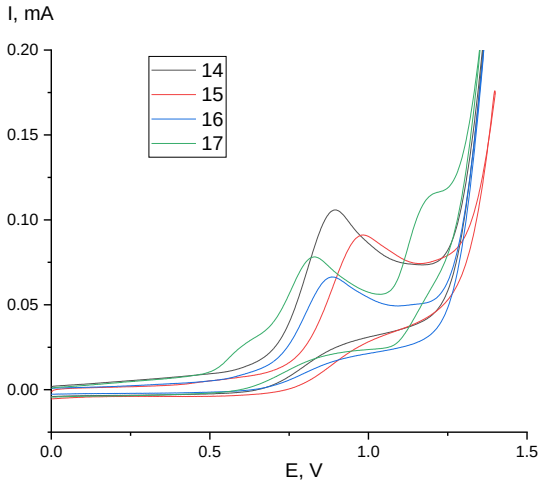

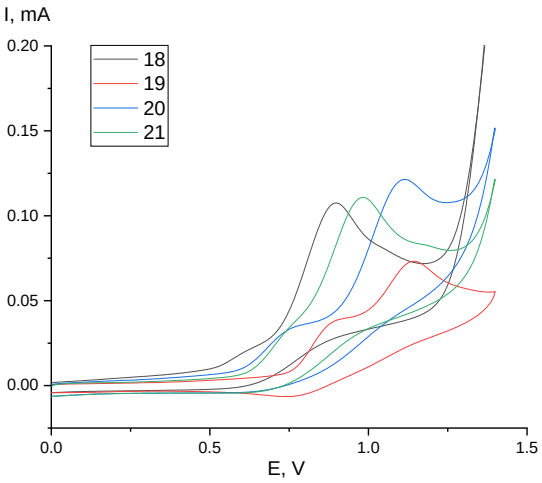

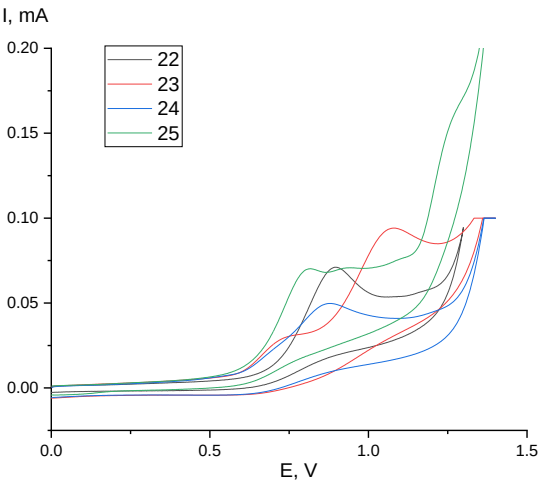

Fig. 1. CVA of the oxidation of isatin derivatives. Solvent – DMF, supporting salt – tetrabutylammonium tetrafluoroborate (0.1 M). Working electrode – glassy carbon, auxiliary – spiral platinum, comparison – Ag/Ag+(0.01 M in CH_3CN). Scan speed 100 mV/s.

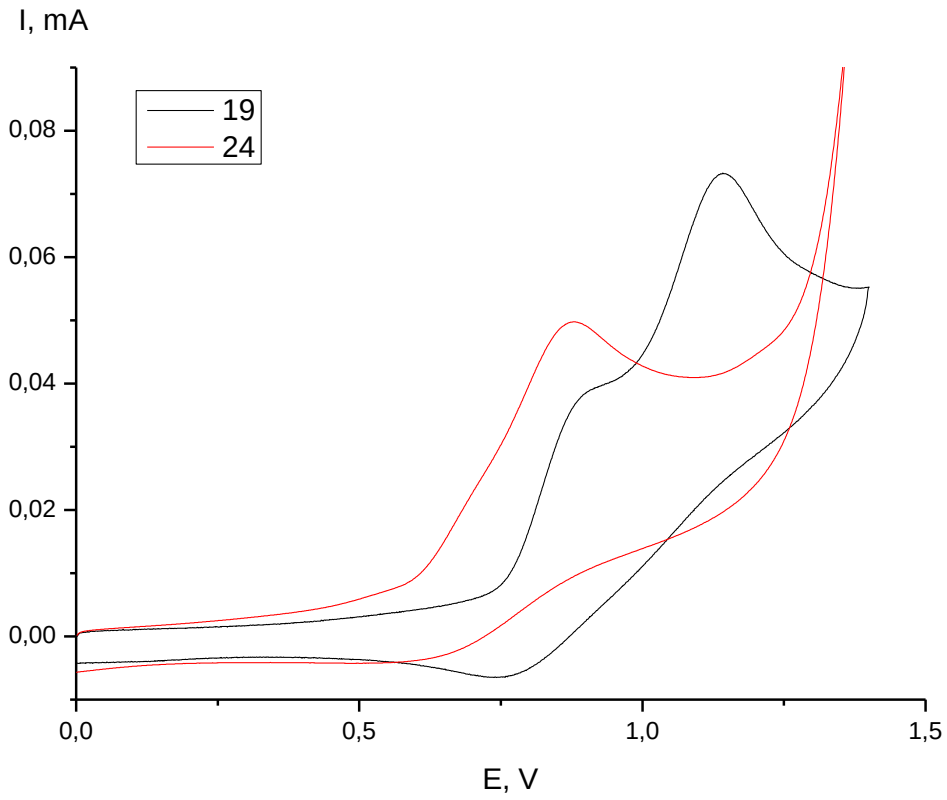

Fig. 2. CVA of oxidation of isatin derivatives containing 5-Cl (**19**) and 5-Cl-7-Br (**24**) substituents in the isatin fragment. Solvent – DMF, supporting salt – tetrabutylammonium tetrafluoroborate (0.1 M). Working electrode – glassy carbon, auxiliary – spiral platinum, comparison – Ag/Ag+(0.01 M in CH_3CN). Scan speed 100 mV/s.

Table 3. Potentials of peaks on the CVA curves of the studied compounds relative to Fc/Fc^+ (working electrode – glassy carbon, auxiliary electrode – Pt).

Compound	Cathode peaks, *E*, V		Anode peaks, *E*, V	
14	C_1	-1.01	A_1	-1.51
	C_2	-1.58	A_2	-0.68
	C_3	-0.20	A_3	0.70
15	C_1	-1.39	A_1	-1.97
	C_2	-1.60	A_2	-1.58
	C_3	-2.62	A_3	-0.68
			A_4	0.71
16	C_1	-0.98	A_1	-1.56
	C_2	-1.57	A_2	-0.69
	C_3	-2.02	A_3	0.68
17	C_1	-1.06	A_1	-1.50
	C_2	-1.52	A_2	-0.70
	C_3	-2.20	A_3	0.63
18	C_1	-0.94	A_1	-1.32
	C_2	-1.41	A_2	0.69
	C_3	-2.08		
19	C_1	-1.13	A_1	-2.78
	C_2	-1.67	A_2	-1.44
	C_3	-2.56	A_3	-1.03
	C_4	-2.86	A_4	-0.36
			A_5	0.63
			A_6	0.88
20	C_1	-1.26	A_1	-2.27

	C_2	-1.92	A_2	-1.83
	C_3	-2.27	A_3	-0.72
	C_4	-2.83	A_4	0.52
			A_5	0.83
21	C_1	-1.34	A_1	-2.00
	C_2	-1.51	A_2	-1.43
	C_3	-1.95	A_3	-0.64
	C_4	-2.68	A_4	0.48
			A_5	0.72
22	C_1	-0.88	A_1	-2.18
	C_2	-1.15	A_2	-1.67
	C_3	-1.39	A_3	-1.47
	C_4	-2.02	A_4	0.32
	C_5	-2.31	A_5	-0.56
			A_6	0.69
23	C_1	-1.14	A_1	-2.01
	C_2	-1.81	A_2	-0.80
	C_3	-2.40	A_3	0.48
	C_4	-2.86	A_4	0.82
24	C_1	-1.22	A_1	-1.93
	C_2	-1.98	A_2	-0.78
	C_3	-2.76	A_3	0.61
25	C_1	-0.88	A_1	-2.20
	C_2	-1.24	A_2	-1.72
	C_3	-1.44	A_3	-0.50

	C_4	-2.28	A_4	0.61
			A_5	0.74
Ascorbic acid	C_1	-1.29	A1	-0.56
	C_2	-2.67	A2	0.31
Ionol	C_1	-1.40	A_1	-0.88
	C_2	-2.67	A_2	0.63
Irganox 1010	C_1	-1.42	A_1	-0.81
			A_2	-0.48

Table 5. Results of spectroelectrochemical study

Compound	Absorption peaks arising during anodic oxidation, nm	Energy of the transition corresponding to the absorption peak during anodic oxidation, eV	Absorption peaks arising during cathodic reduction, nm	Energy of the transition corresponding to the absorption peak during cathodic reduction, eV
Background electrolyte	284	4,37	278	4,46
14	350	3,54	370	3,35
15	329	3,77	367, 332	3,38, 3,73
16	362, 341	3,42, 3,64	364,330	3,41, 3,76
17	320	3.87	395, 324	3,14, 3,83
18	355	3,49	384	3,23
19	350	3,54	373, 325	3,32, 3,81
20	473, 405 (отриц.)	2,62, 3,06	436	2,84
22	335	3,7	387, 344	3,2, 3,6
23	336	3,69	579, 536, 442, 421	2,14, 2,31, 3,81, 2,94
25	387, 344	3,2, 3,6	367	3,38

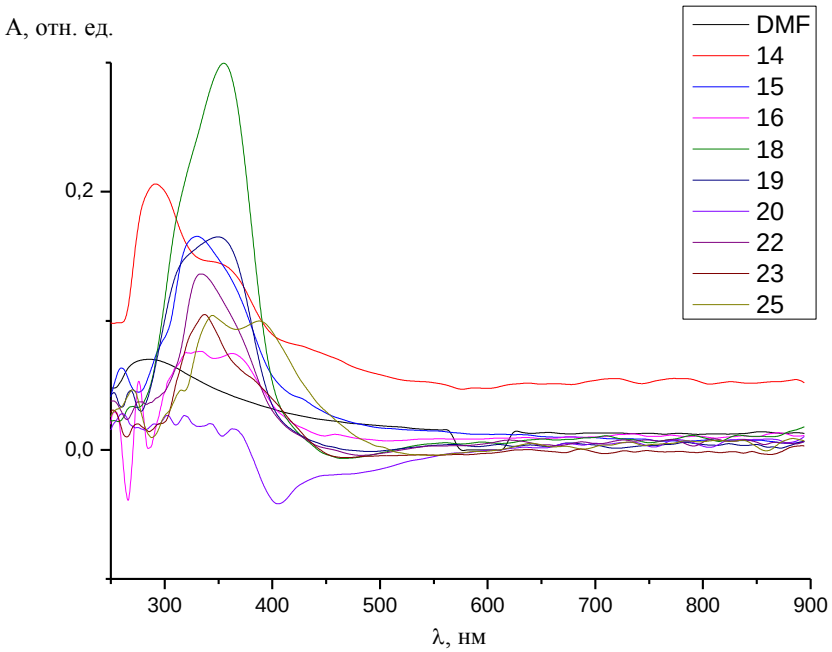

Fig. 3. Optical absorption spectra of isatin derivative solutions obtained by anodic oxidation. The solution concentration was 10^{-4} M, and the solvent was DMF. The graph shows the difference spectra, where the background line for each curve is the absorption spectrum of the original sample.

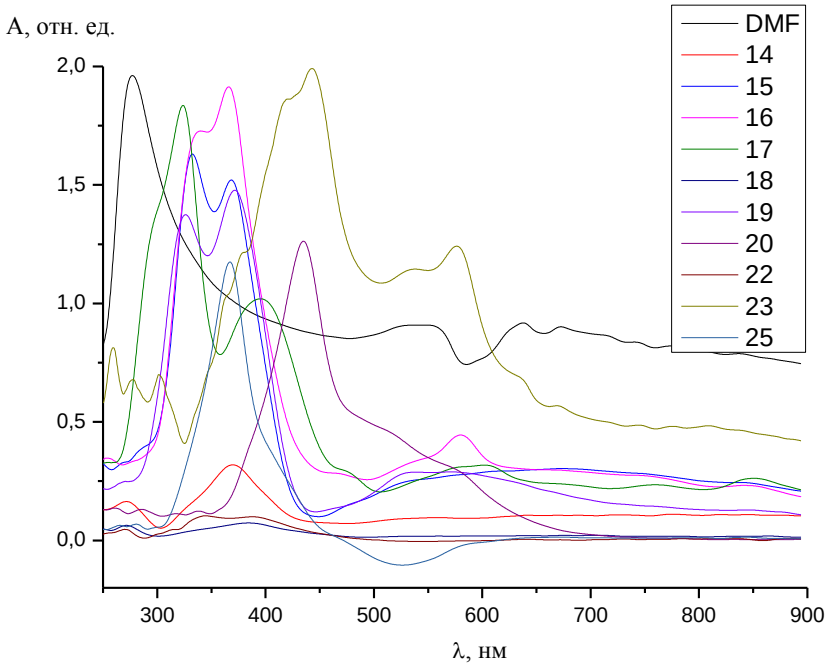

Fig. 4. Optical absorption spectra of isatin derivative solutions obtained by cathodic reduction. The solution concentration was 10^{-4} M, and the solvent was DMF. The graph shows the difference spectra, where the background line for each curve is the absorption spectrum of the original sample.