



# Képfeldolgozás

Barsi Árpád

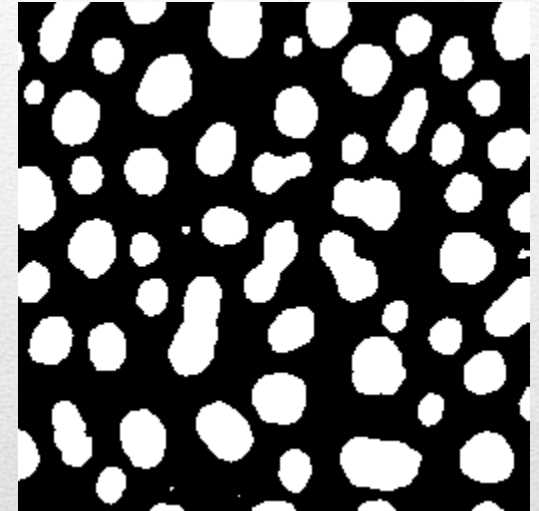
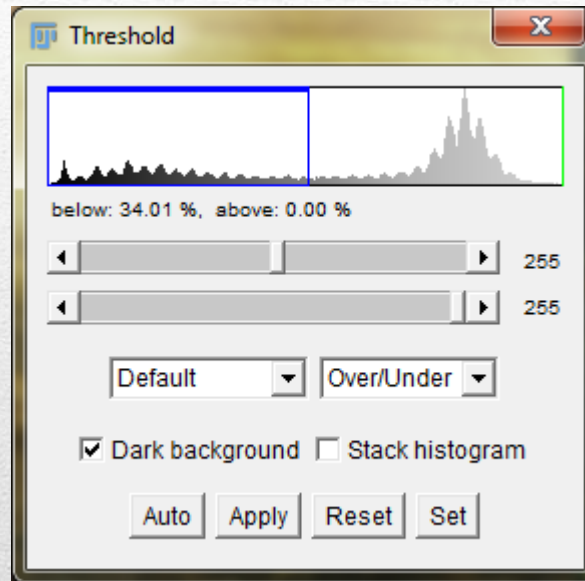
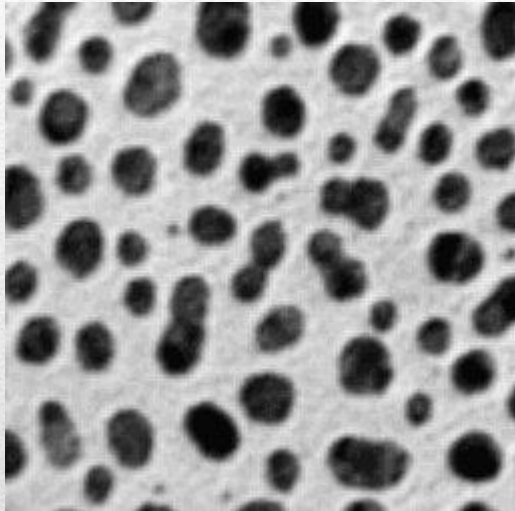
BME Fotogrammetria és Térinformatika Tanszék

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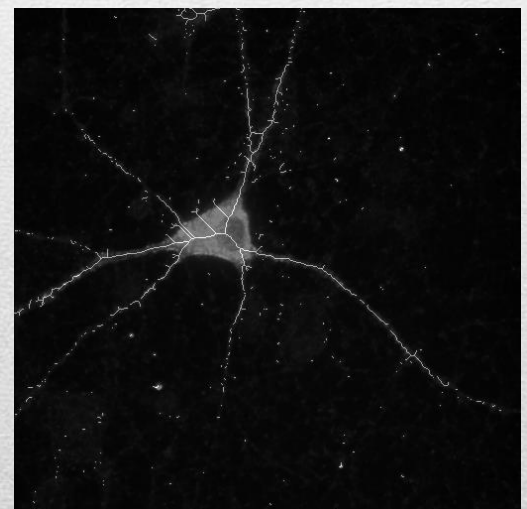
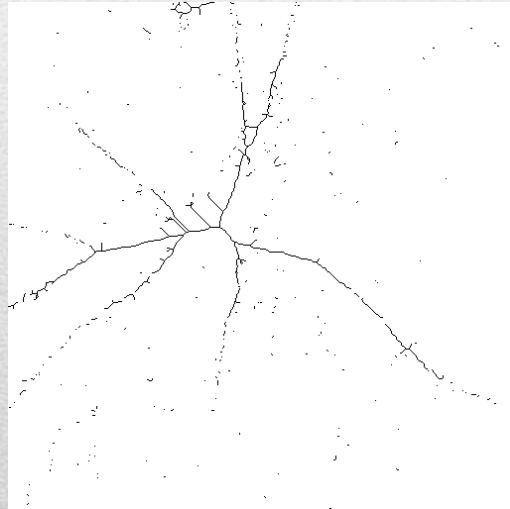
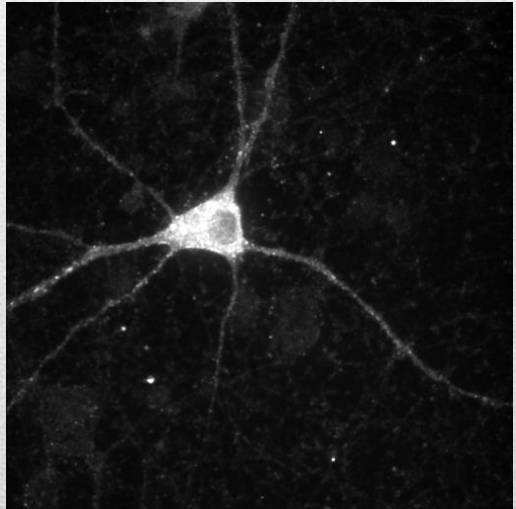
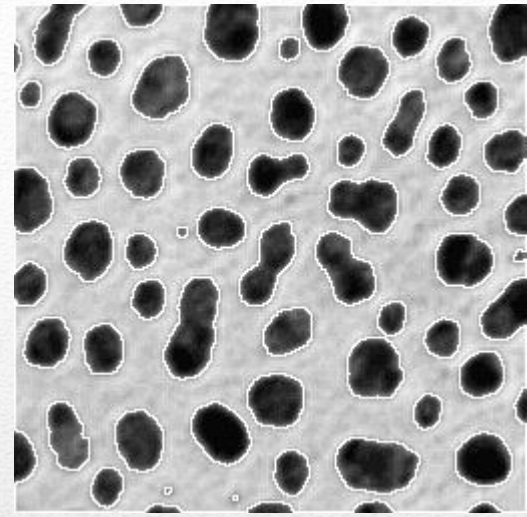
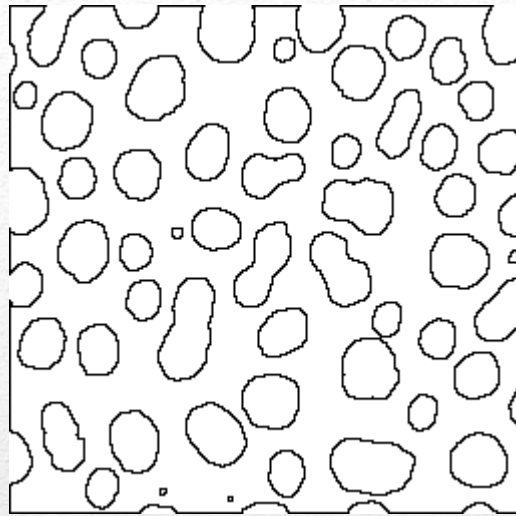
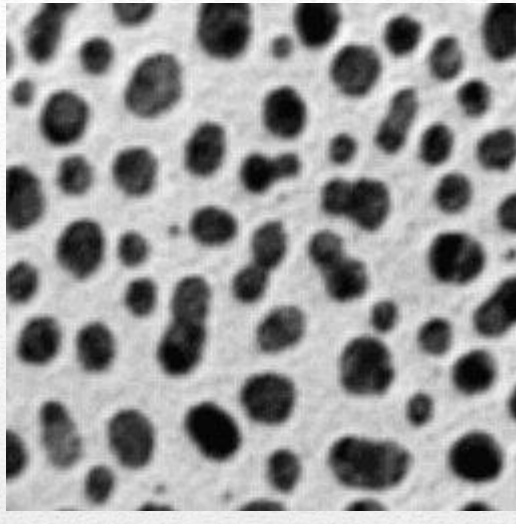
- Geometria: méret beállítása
- Threshold
- Bináris műveletek
- Részecske-elemzés
- Stack-műveletek
- 3D-megjelenítés

# Tartalom



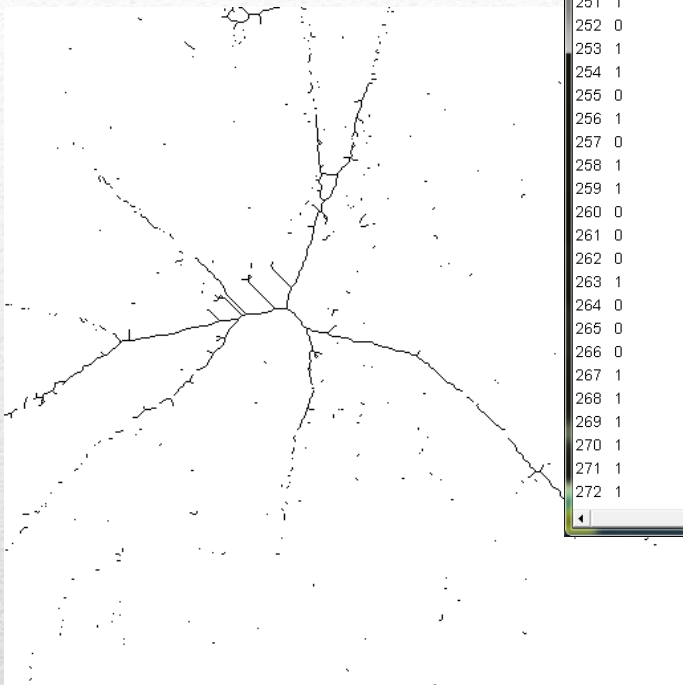


# Threshold

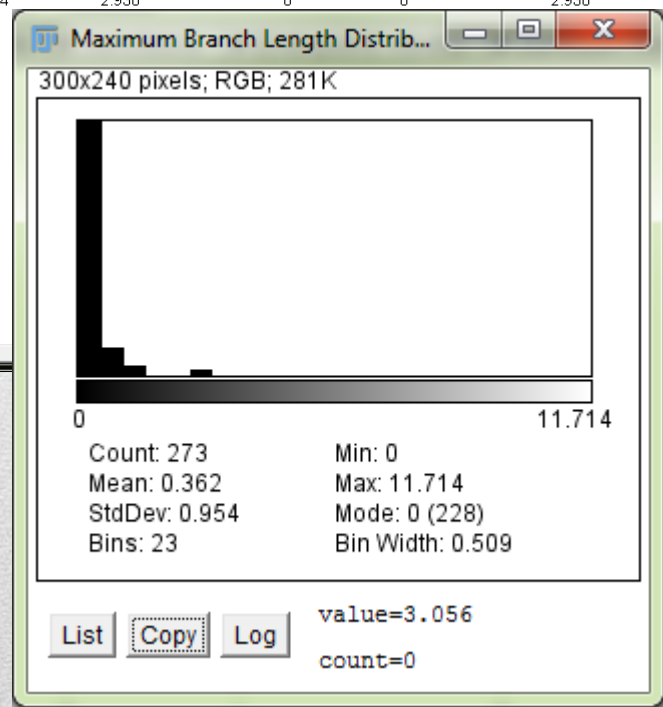


# Bináris műveletek

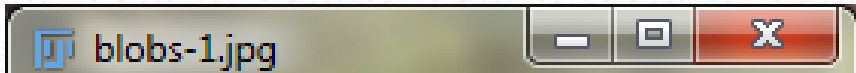




Results										
File	Edit	Font	Results							
# Branches	# Junctions	# End-point voxels	# Junction voxels	# Slab voxels	Average Branch Length	# Triple points	# Quadruple points	Maximum Branch Length		
249	1	0	2	0	2	0.546	0	0	0.546	
250	1	0	2	0	0	0.226	0	0	0.226	
251	1	0	2	0	1	0.386	0	0	0.386	
252	0	0	1	0	0	0.000	0	0	0.000	
253	1	0	2	0	0	0.226	0	0	0.226	
254	1	0	2	0	0	0.160	0	0	0.160	
255	0	0	1	0	0	0.000	0	0	0.000	
256	1	0	2	0	0	0.226	0	0	0.226	
257	0	0	1	0	0	0.000	0	0	0.000	
258	1	0	2	0	14	2.930	0	0	2.930	
259	1	0	2	0	0	0.000	0	0	0.000	
260	0	0	1	0	0	0.000	0	0	0.000	
261	0	0	1	0	0	0.000	0	0	0.000	
262	0	0	1	0	0	0.000	0	0	0.000	
263	1	0	2	0	0	0.000	0	0	0.000	
264	0	0	1	0	0	0.000	0	0	0.000	
265	0	0	1	0	0	0.000	0	0	0.000	
266	0	0	1	0	0	0.000	0	0	0.000	
267	1	0	2	0	0	0.000	0	0	0.000	
268	1	0	2	0	3	0.000	0	0	0.000	
269	1	0	2	0	0	0.000	0	0	0.000	
270	1	0	2	0	1	0.000	0	0	0.000	
271	1	0	2	0	0	0.000	0	0	0.000	
272	1	0	2	0	0	0.000	0	0	0.000	

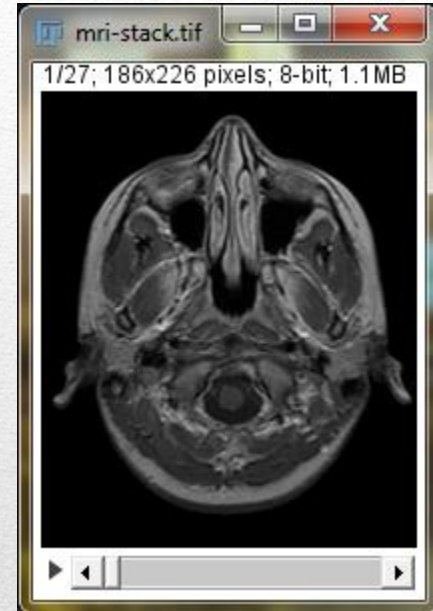
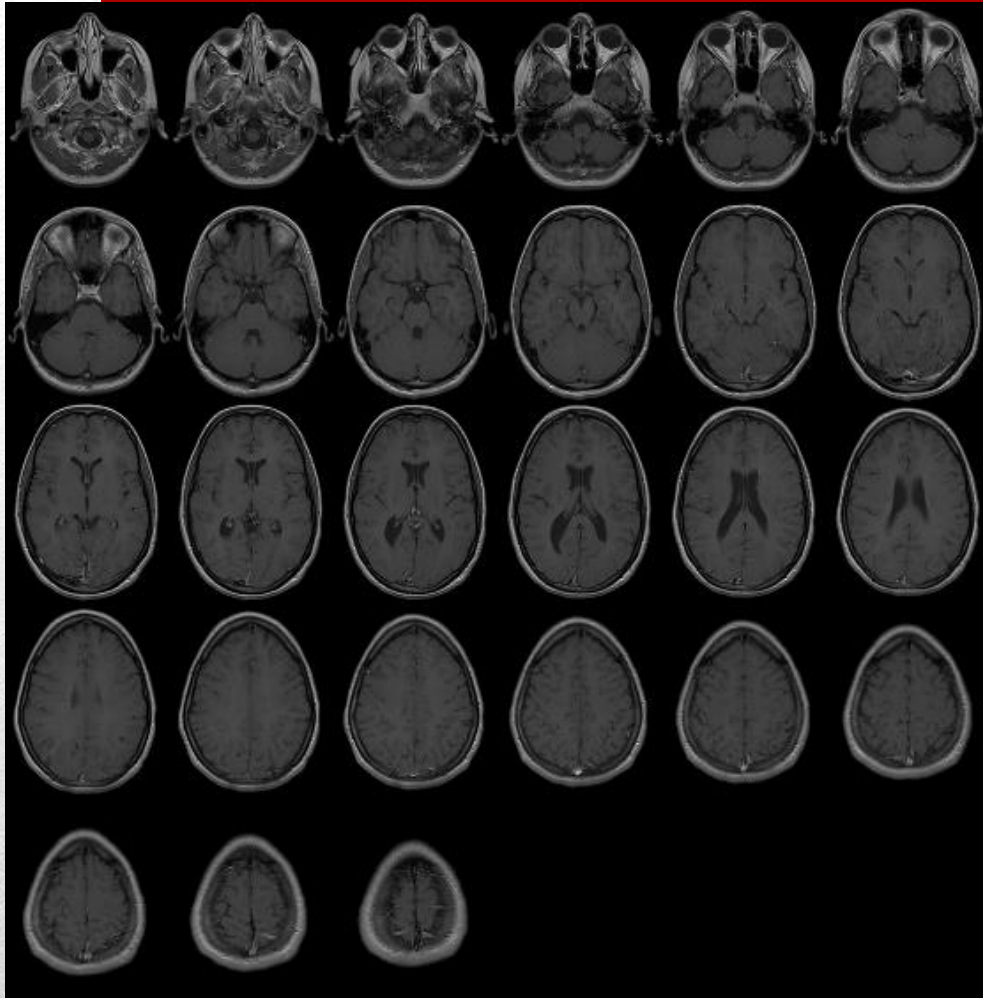


# Skeleton-elemzés



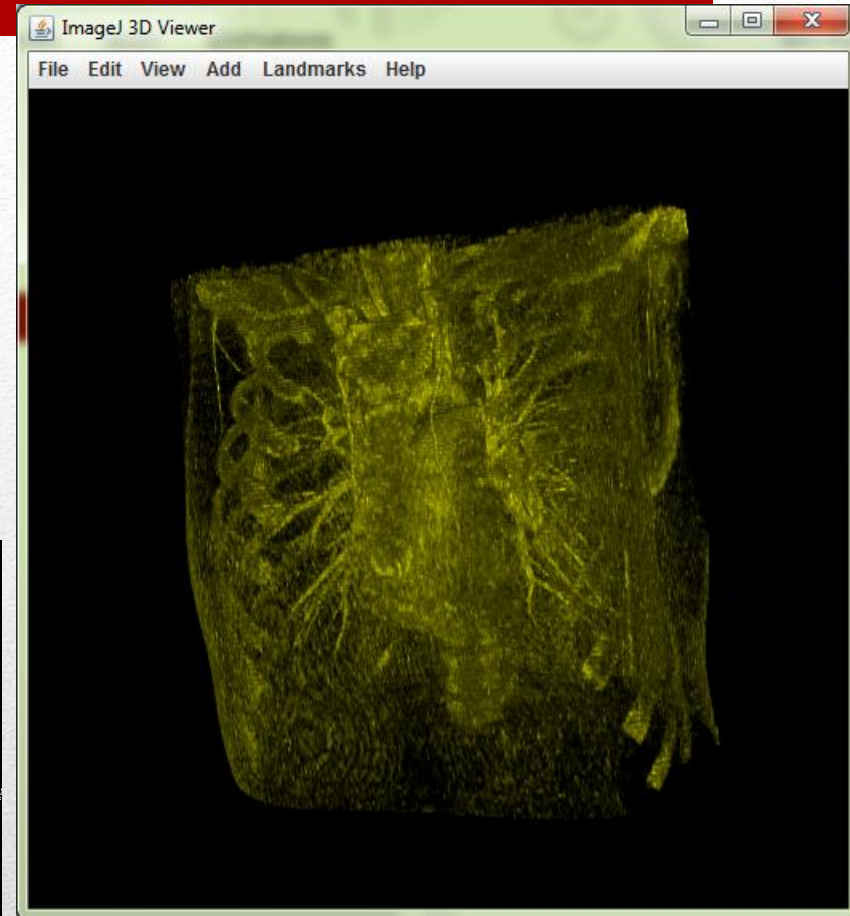
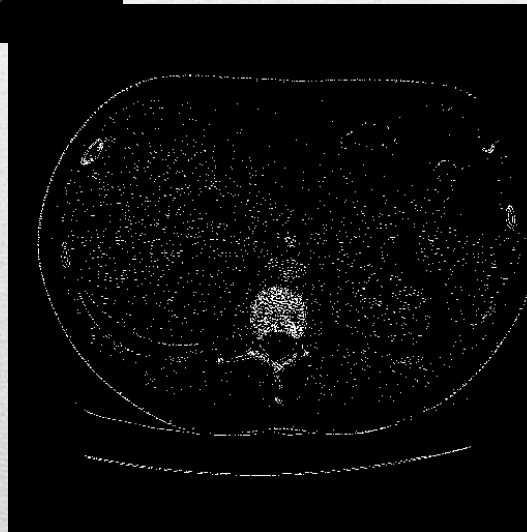
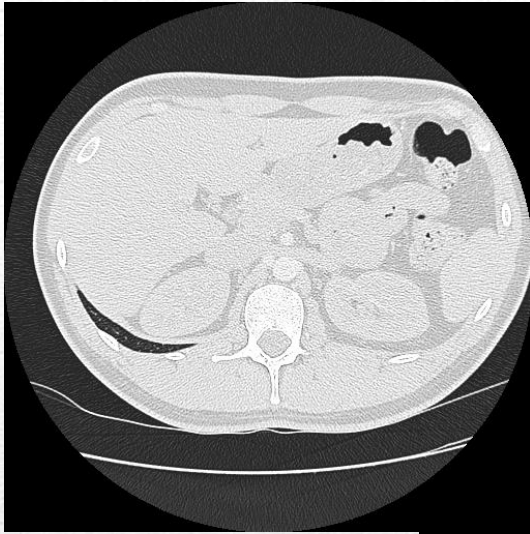
File	Edit	Font	Results																		
	Area	Mean	StdDev	Mode	Min	Max	X	Y	XM	YM	Perim.	BX	BY	Width	Height	Major	Minor	Angle	Circ.	Feret	IntDe
1	430	255	0	255	255	255	20.491	13.758	20.491	13.758	92.912	10	0	26	30	33.822	16.188	64.572	0.626	36.620	1096
2	185	255	0	255	255	255	63.522	4.792	63.522	4.792	55.213	53	0	21	11	20.333	11.584	2.541	0.763	21.378	4717
3	659	255	0	255	255	255	108.810	13.068	108.810	13.068	97.355	95	0	27	28	29.900	28.062	81.099	0.874	33.015	1680
4	433	255	0	255	255	255	154.994	10.318	154.994	10.318	78.527	144	0	23	23	24.207	22.775	62.863	0.882	27.203	1104
5	474	255	0	255	255	255	247.333	13.994	247.333	13.994	85.456	237	0	19	29	30.844	19.567	87.510	0.816	31.780	1206
6	282	255	0	255	255	255	197.770	16.252	197.770	16.252	62.184	189	6	18	21	20.421	17.583	68.863	0.916	21.840	7191
7	80	255	0	255	255	255	137.525	22.212	137.525	22.212	32.385	133	17	9	11	10.996	9.263	65.859	0.959	12.042	2040
8	276	255	0	255	255	255	219.264	28.228	219.264	28.228	63.355	211	17	17	22	22.037	15.947	84.207	0.864	23.087	7036
9	229	255	0	255	255	255	45.020	26.635	45.020	26.635	55.698	37	18	16	18	18.261	15.967	83.712	0.928	19.209	5839
10	30	255	0	255	255	255	1.200	26.900	1.200	26.900	30.485	0	20	3	14	12.873	2.967	90.274	0.406	14.036	7650
11	498	255	0	255	255	255	174.462	33.602	174.462	33.602	82.669	162	21	25	26	26.112	24.283	74.368	0.916	27.459	1269
12	658	255	0	255	255	255	73.809	41.737	73.809	41.737	98.326	59	26	28	31	33.445	25.050	57.281	0.855	35.000	1677
13	98	255	0	255	255	255	8.276	45.245	8.276	45.245	35.799	3	39	10	12	12.584	9.915	73.442	0.961	13.416	2499
14	228	255	0	255	255	255	233.592	47.645	233.592	47.645	55.698	225	39	16	18	18.208	15.943	92.820	0.924	19.313	5814
15	449	255	0	255	255	255	138.945	55.253	138.945	55.253	78.426	128	42	22	26	26.217	21.806	96.216	0.917	26.926	1144
16	398	255	0	255	255	255	195.176	59.693	195.176	59.693	87.497	184	43	21	33	35.669	14.207	67.370	0.653	35.468	1014
17	516	255	0	255	255	255	28.878	58.043	28.878	58.043	84.083	17	44	24	28	27.883	23.562	70.650	0.917	28.792	1315
18	422	255	0	255	255	255	99.384	73.654	99.384	73.654	77.012	89	60	20	27	27.894	19.263	70.434	0.894	28.302	1076
19	269	255	0	255	255	255	214.682	71.147	214.682	71.147	62.184	206	60	17	22	21.543	15.899	73.738	0.874	22.561	6859
20	349	255	0	255	255	255	245.775	73.437	245.775	73.437	68.770	235	63	21	21	22.807	19.483	36.914	0.927	24.413	8899
21	159	255	0	255	255	255	168.022	73.211	168.022	73.211	46.284	162	65	13	16	15.748	12.856	70.553	0.933	16.492	4054
22	411	255	0	255	255	255	64.339	84.420	64.339	84.420	75.598	53	73	22	24	24.006	21.799	98.716	0.904	25.239	1046
23	424	255	0	255	255	255	130.285	84.149	130.285	84.149	87.497	117	75	30	21	31.393	17.197	17.601	0.696	31.906	1081
24	256	255	0	255	255	255	34.180	86.617	34.180	86.617	59.941	25	77	18	19	19.624	16.610	86.269	0.895	20.616	6526

# Részecske-elemzés



# Stack beolvasása





# 3D megjelenítés



- Gonzalez, R.C. – Woods, R.E.: Digital Image Processing
- Jähne, B.: Digital Image Processing
- Russ, J.C.: The Image Processing Handbook
- Epstein, L.C.: Introduction to the Mathematics of Medical Imaging
- Suetens, P.: Fundamentals of Medical Imaging
- [dicom.nema.org](http://dicom.nema.org)
- <http://www.olympusmicro.com/>

# Irodalom/referencia



Köszönöm a  
figyelmet!