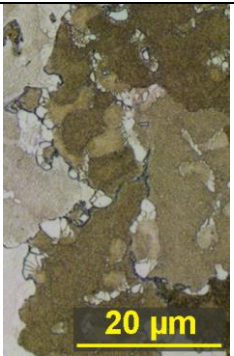
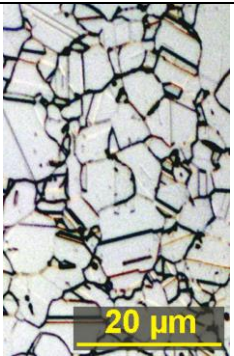
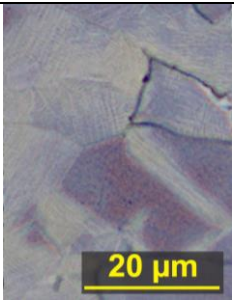
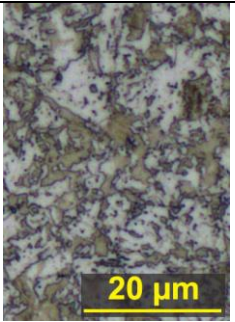
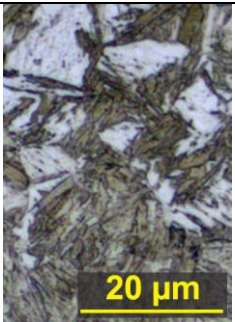


Tab. 1 Properties and microstructures of individual materials used for samples shown using light microscopy

Material	Properties	Use	Chemical composition (wt. %)	Hardness	Microstructure
B1914	- oxidation resistance, - good strength at high temperatures, - heat-resistant and corrosion-resistant	- turbine blades, - turbocharger wheels, - components of combustion turbines,	0.009 % C, 0.08 % B, 9.99 % Cr, 9.63 % Co, 5.51% Al, 5.28 % Ti, 2.90 % Mo, 0.002 % Zr, Ni-balance	231 HBW	
Nimonic 263	- oxidation resistance, - good strength at high temperatures, - heat-resistant and corrosion-resistant	- components in the aerospace, energy and automotive industries, - turbine blades and turbocharger wheels capable of operating at increasing temperatures not exceeding 1000 °C	20% Cr, 6.3 % Mo, 0.5 % Al, 16.7 % Co, 0.45 % Mn, 1 % Fe, 1.9 % Ti, 0.04 % Nb, 0.15 % W, 0.07 % Cu, 0.19 % Si, 0.02 % V, 0.02 % C, Ni-balance	195 HV	
Hadfield steel	- self-reinforcing ability, - resistance to high impact stress, - very good	- equipment working in the mining and quarrying industry, - sections of railway lines	1.1-1.3 % C, 12-13 % Mn, 0.3-0.7 % Si, 1.5 % Cr, max. 0.1 % P, max. 0.04 % S, Fe - balance	200 HB	

	run-in				
Creusabro 4800	- high heat resistance in environments up to 400 °C, - ability to absorb deformation forces	- in mines and quarries, - in the steel and cement industries, - founding and agricultural machinery	0.2 % C, 1.6 % Mn, 0.2 % Ni, 1.9 % Cr, 0.4 % Mo, 0.2 % Ti, max 0.005 % S, max 0.018 % P, Fe – balance	370 HB	
Hardox 400	- good cold flexibility, - resistance to abrasive wear, - good weldability	- truck bodies, as it allowed the use of the construction without reinforcements	0.3 % C, 0.7 % Si, 1.6 % Mn, 1.4 % Cr, 1.5 % Ni, 0.6 % Mo, max 0.01 % S, max 0.025 % P, Fe – balance	400 HBW	

Tab. 2 Machine setup parameters

Number of sample	Gap voltage (V)	Pulse on time (µs)	Pulse off time (µs)	Wire feed (m·min ⁻¹)	Discharge current (A)
1	70	8	40	12	30
2	60	8	30	14	30
3	60	10	40	12	25

Tab. 3 Spearman's correlation coefficient *Rho* and p-value of the independence test

	B1914	Creusabro 4800	Hadfield's steel	Hardox 400	Nimonic 263
Rho of H vs. Distance from surface					
(p-value)	0.011 (0.896)	0.732 (0.000)	0.899 (0.000)	0.028 (0.743)	0.400 (0.000)
Rho of Er vs. Distance from surface					
(p-value)	0.143 (0.097)	0.807 (0.000)	0.950 (0.000)	0.007 (0.932)	0.392 (0.000)