NEURAL NETWORKS IN POWDER METALLURGY

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***Abstract**: A neural network approach in modelling and its application at powder metallurgy processes is given. The model is based on experimental data applying multilayer neural network, whose massive parallelism and multipath structure give best results. Powder metallurgy process with powder cold compacting in closed tool with the variants is given in short. The basic principle of modelling of a process unknown behaviour is shown and development of neural network model is described. Simulation results showed that neural network models give less approximation error then statistical procedure, which is in conventional application. Practical significance of the presented procedure is in better prediction of output characteristics (mechanical properties, tool dimensions etc.). In the example prediction of the dimensional changes during sintering using neural networks is given.*

***Keywords**: Process modelling, Powder metallurgy, Neural networks, Backpropagation learning algorithm*