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Positron annihilation studies of aluminum exposed to sandblasting

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Process involving bombarding a surface with dashing abrasive particles called sandblasting is often used in industry to clean surfaces of different objects by removing paints, impurities or corrosion products. It is the basic tool to remove oxides after heating of alloys being the future implant in prosthetics. Another important area of its application is an induction of nanocrystallization by previous sandblasting and annealing. The motivation of presented studies is characterization of subsurface layer modifications of sandblasted aluminum in dependency on the pressure in the stream of alumina particles and different treatment time. The experimental techniques were selected to provide wider discussion related to impact of sandblasting on changes generated below the surface. A kind of introduced defects and their depth profiles found using Positron Annihilation Spectroscopy techniques will be reported.

Primary authors: Mr JAGODA, Paweł (AGH UST, JINR); Mr WTULICH, Mariusz (Gdańsk University of Technology, JINR); Dr SIEMEK, Krzysztof (JINR, IFJ PAN); Dr HORODEK, Pawel (JINR, IFJ PAN)

Co-authors: Ms CHIRIACESCU, Ana (University of Bucharest, JINR); Ms POGODA, Daria (Wrocław University of Science and Technology, JINR); Mr LEIBNER, Michal (Charles University, JINR)

Presenters: Mr JAGODA, Paweł (AGH UST, JINR); Mr WTULICH, Mariusz (Gdańsk University of Technology, JINR)

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