

**Title:** Determination of Airborne Nanoparticles from Welding Operations

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**Abstract:** The aim of this study is to assess the levels of airborne ultrafine particles emitted in welding processes (tungsten inert gas [TIG], metal active gas [MAG] of carbon steel, and friction stir welding [FSW] of aluminum) in terms of deposited area in pulmonary alveolar tract using a nanoparticle surface area monitor (NSAM) analyzer. The obtained results showed the dependence of process parameters on emitted ultrafine particles and demonstrated the presence of ultrafine particles compared to background levels. Data indicated that the process that resulted in the lowest levels of alveolar deposited surface area (ADSA) was FSW, followed by TIG and MAG. However, all tested processes resulted in significant concentrations of ultrafine particles being deposited in humans lungs of exposed workers.

**KeyWords Plus:** Indoor Air-Pollution; Ultrafine Particles; Health; Parameters; Countries

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