

## Sample Abstract Guidelines:

1. Abstract Content should be in English.  
Done.
2. The maximum word count should be 300-400 words  
Done.
3. If your title includes scientific notation, Greek letters, bold, italics, or other special characters/symbols, do make sure they appear correctly.  
Done
4. Corresponding details of corresponding author should be correct which will be used for further communication.  
Done
5. Abstracts should highlight the major points of your research and should not include tables, figures, and references.  
Done

**Title: the effect of machining parameters on 0.8 mm brass using plasma arc (PA) technique for optimizing cutting quality**

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## Format

**Presentation title:** The effect of machining parameters on 0.8 mm brass using plasma arc (PA) technique for optimizing cutting quality

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**Other Authors if any:** Non

**Presentation type:** (Oral presentation/ Poster presentation)



### **Abstract (300-400 words):**

Brass is an important copper alloy with two components: copper and zinc. It is characterized by some properties such as electrical and thermal conductivity; corrosion resistance; and strength reliability. It has excellent hot/cold formability and the ability to draw, drill, and coining. The thin brass sheets are used with a thickness of 0.8 mm in operation. These sheets are used in the manufacturing of metal products by machining metal cladding tiles; brands; signs; lighting units; jewelry accessories; bags; clothing ornamental accessories; coins; touristic and commemorative products; and many others ... etc.

PAC is demonstrated and classified as an electro-thermal technique. It is economical both in terms of the cost of machines, equipment, and operation, compared to other unconventional techniques such as laser cutting. It also allows cutting the parts of products in both straight and curved paths in addition to the kinds of angles in contrast to the conventional cutting methods.

This study aims to investigate the effect of machining parameters on 0.8 mm thickness brass sheets using the plasma Arc (PA) technique to optimize cutting quality. It uses the experimental approach to machine 24 specimens. It concluded that: using a higher ampere led to more heat input to the material. Improving the cutting quality requires using higher cutting speeds with lower amperes. Increasing the heat input increases the kerf width of the cutting path. The use of low cutting speeds with high amperes resulted in higher heat energy at the surface of the specimen. This increases the molten areas. The higher thermal concentration at the acute angles has also resulted in the widest kerf width at all the amperes used. The cutting quality of the corners and angles is worse than the cutting of the straight lines. The cut at the obtuse angles is slightly better than the cut at acute angles due to heat concentration. Surface roughness increases as the cutting speed increases. The amount of dross resulting from cutting has been reduced, using moderate amperes and higher cutting speeds. Using a capacity of 30 amperes with a speed of 1500 cm/min is the optimum value to obtain the best quality cut.

### **Biography (150-200 words):**

He is a Prof in the Faculty of Applied Arts. Industrial Design Engineering Department- Metals branch. His specialty is Nontraditional machining. The Last publication for the author is influence of the cutting feed rate on the hardness and microstructure of copper using plasma arc machining (PAM), The considerations of designing modern metal furniture supplements for hotel restaurants, benefitting from islamic art (with the application at the radisson blue hotel, Jizan city), the effect of machining parameters of thin brass sheets using abrasive water jetting technology on kerf path width on optimizing the cutting quality of products surfaces, an investigation into stand-off distance & cutting speed on surface roughness using abrasive water jet, utilizing Jazan heritage products to design sustainable industrial lighting units for the radisson blu hotels Neum city, the influence of speed on Kerf Width using PA to optimize the quality of 1mm copper sheets, investigating the effect of speed on roughness & quality of the cutting surface edge of 1 mm copper sheets using plasma arc, investigating the effect of amper and cutting speed on KW of 10 mm Al using PAM for optimizing cutting quality of metal surfaces, the effect of speed and amper on roughness of the cutting surface edge depth of 10 mm Al using PAM, the considerations of designing modern metal furniture supplements for hotel restaurants, benefitting from islamic art (with the application at the radisson blue hotel, Jizan city), and the effect of cutting speed and amp on hardness and microstructure of 10 mm Al surface cut using PAC. His Google Scholar ID is <https://scholar.google.com/citations?hl=ar&user=gAT8gFsAAAAJ>