## English Articles

### Fowler-Nordheim Plot Analysis: A Progress Report

The commonest method of characterizing a cold field electron emitter is to measure its current-voltage characteristics, and the commonest method of analyzing these characteristics is by means of a Fowler-Nordheim (FN) plot. This tutorial/review-type paper outlines a more systematic method of setting out the Fowler-Nordheim-type theory of cold field electron emission, and brings together and summarizes the current state of work by the authors on developing the theory and methodology of FN plot analysis.

Richard G. Forbes, Jonathan H. B. Deane, Andreas Fischer and Marwan S. Mousa

*JJP, 2015, 8(3), 125-147*

### On the Distribution of Massive White Dwarfs and Its Implication for Accretion-Induced Collapse

A White Dwarf (WD) star and a main-sequence companion may interact through their different stellar evolution stages. This sort of binary population has historically helped us improve our understanding of binary formation and evolution scenarios. The data set used for the analysis consists of 115 well-measured WD masses obtained by the Sloan Digital Sky Survey (SDSS).

Ali Taani

*JJP, 2015, 8(3), 149-155*

### Non-Destructive SR-XRF Analysis of Ancient Mamluk-Ayyubid Glazed Pottery Fragments from Karak Castle, Jordan

Sixteen Ayyubid-Mamluk glazed pottery sherds were analyzed in order to identify and characterize the elemental composition to determine their provenance. The tested sherds were collected from the historical site of Karak Castle, southern Jordan. Chemical analysis for the sixteen samples has been carried out using Synchrotron Radiation X-ray Fluorescence Spectrometry (SR-XRF) Technique.

A. Aldrabee, A. Wriekat, K. AbuSaleem and M. Radtke

*JJP, 2015, 8(3), 157-163*

### Impact of Superficial Building Materials on Indoor Radon Level

This study is undertaken to determine the activity concentration of $^{226}\text{Ra}$, $^{232}\text{Th}$, $^{40}\text{K}$ and radon emanation coefficient of some superficial materials commonly used in dwelling for interior decoration. Eighty samples of four different materials were collected from local suppliers and analyzed, employing high resolution gamma-ray spectroscopy.

J. M. Sharaf, M. S. Harmideenb and H. H. Saleh

*JJP, 2015, 8(3), 165-176*

### On the Optimization of the Microstructure and Mechanical Properties of Al-Co-Cr-Cu-Fe-Ni-Ti –Based High Entropy Alloys

Widely investigated AlCoCrCuFeNi high entropy alloy has been chosen for optimization of the microstructural and mechanical properties. Different paths have been chosen for


*JJP, 2015, 8(3), 177-186*
optimization; namely the decrease of segregating element Cu, the increase of oxidation protective elements Al and Cr and the approach towards a $\gamma-\gamma'$ microstructure as in Ni-based superalloys...