**Microstructural Evolution of Nanocrystalline (Ti0.8V0.2)C Powders**

**Prepared Through Mechanical Alloying**

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**Abstract:**

Nanostructured solid solution (Ti0.8V0.2)C with a crystallite size of about 15 nm was fabricated by mechanical alloying (MA). The elemental Ti, V, and C powders were milled to 20 h in argon atmosphere in a Fritsh Pulverisette 7 planetary mill. Phase changes and microstructure of the powders during MA were characterized by using scanning electronic microscopy (SEM) coupled with EDX, X-ray diffraction (XRD), and transmission electron microscopy (TEM). The results show that the crystallite size of the MA powders decreases with increasing milling time while the microstrain is found to increases. Hence, the crystallite size of the final product determined by XRD is similar to that obtained by TEM analysis.

**Biography of presenting author**

Dr. Mohsen Mhadhbi obtained his Ph.D. degree from the Faculty of Sciences of Sfax, Tunisia. He is currently Assistant Professor of Chemistry in National Institute of Research and Physical-chemical Analysis, Tunisia. His research interests include material engineering, modelling, powder technology, and nanomaterials for mechanical and biomedical applications. Her published works in national and international impacted journals and books. He is a teacher in Chemistry. Hence, he supervised several researchers in materials science and nanometerials. He is a member of various scientific journals and associations and has been serving as an editorial board member of repute.

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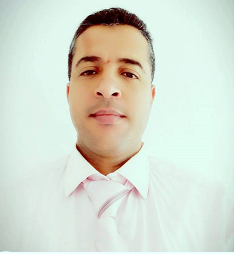
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