International Webinar on Nano Materials

Organized by: Department of Chemistry, Tulasi Women's College

Date: 06.04.2023

Time: 02:00 PM

An International Webinar on Nano Materials was organized by the Department of Chemistry, Tulasi Women's College on 06.04.2023 at 02:00 PM IST. The webinar was chaired by the principal Dr. Pramilarani Behera. The President of the Governing Body, Dr. Amiya Kumar Mohanty joined as the Chief Guest. In the webinar, Dr. Amita Somya, Associated Professor in Chemistry participated as Keynote Speaker. Dr. ShashankaRajendrachari, Assistant Professor, Department of Metallurgical and Mechanical Engineering, Bartin University, Turkey, joined as the Invited Speaker. In her keynote address, Dr Somya discussed about the nano composites and their applications. Dr. Rajendrachari spoke about the high entropy alloys and their relevance in modern times. The webinar witnessed the participation of more than 300 students from within the country and abroad. Mr. Sanat Kumar Pradhan, lecturer in Chemistry proposed the vote of thanks.

Fabrication of nano-structructured High entropy alloys by planetary ball mill followed by electrochemical sensor applications

Shashanka Rajendrachari

Department of Metallurgical and Materials Engineering, Bartin University, Bartin-74100, Turkey

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Abstract:

Modern alloys, like high-entropy alloys (HEAs), are emerging with greater acceleration due to their wide range of properties and applications. HEAs can be prepared from many metallurgical operations, but mechanical alloying is considered to be one of the simplest, most economical, popular, and suitable methods due to its increased solid solubility, nano-crystalline structure, greater homogeneity, and room-temperature processing. Additionally, we will discuss the recent statistics about the articles published on the fabrication of HEA by mechanical alloying. In the present talk, we will discuss the fabrication of HEA (23Fe-21Cr-18Ni-20Ti-18Mn) powders by ball milling the elemental Fe, Cr, Ni, Ti, and Mn powders for 15. The advancement of the milling process and phase transformation of HEAs were studied by using X-ray diffraction (XRD) and scanning electron microscope (SEM). We will also discuss the electrochemical response of 15 h ball-milled HEA powders to determine the ascorbic acid (AA) using cyclic voltammetry. We investigated the effect of modifier concentration, analyte concentration, scan rate, and pH on the oxidation peak of AA. The electrochemical active surface area of carbon paste and MCPE was calculated using the Nernst equation and the values were found to be 0.0014 cm^2 and 0.0027 cm^2, respectively. The fabricated HEA-MCPE showed excellent current sensitivity, stability, anti-fouling, and selectivity.

Keywords: Modifier; carbon paste electrodes; planetary ball mill; electro-oxidation; ascorbic acid sensor:

Nano Composites and Their Applications

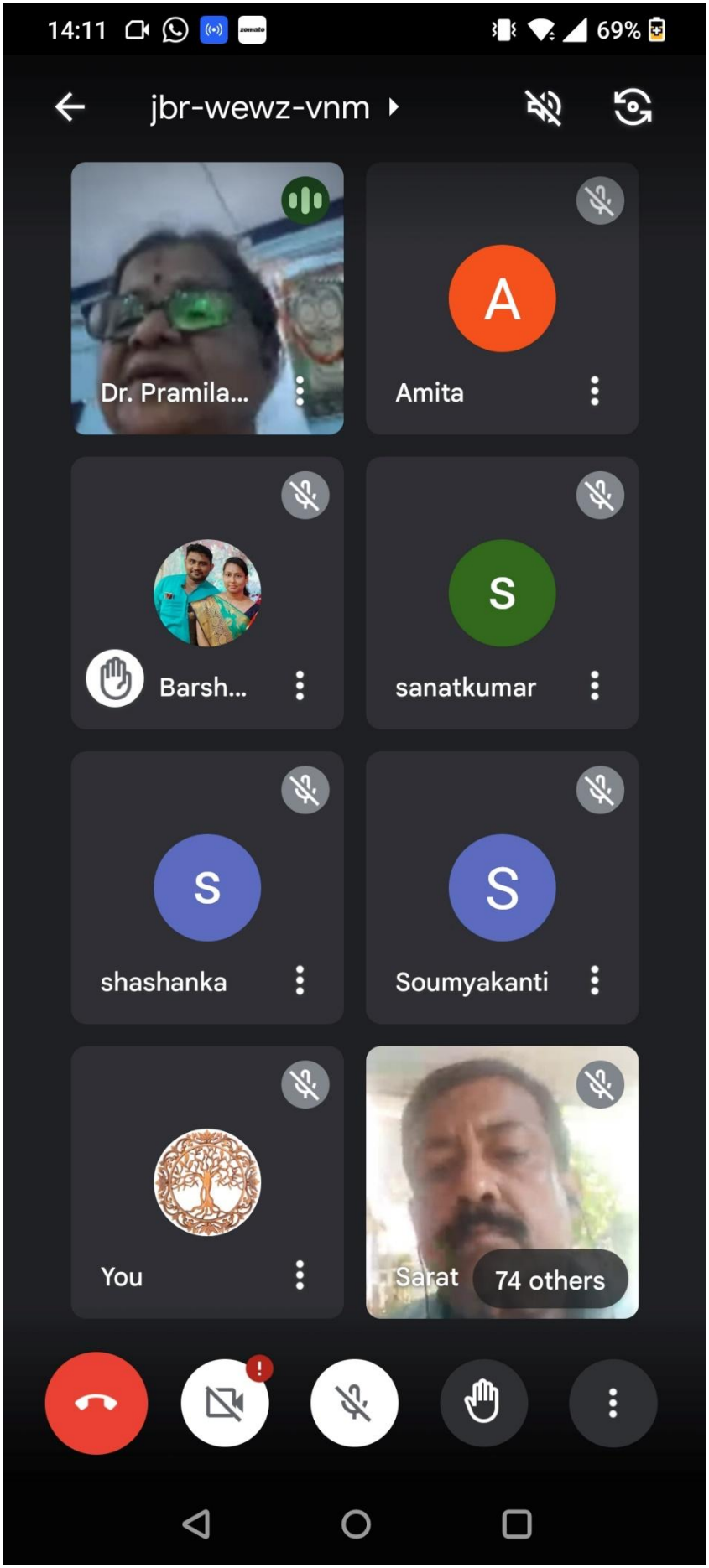
Dr. Amita Somya

Associate Professor, Department of Chemistry,

Presidency University, Bengaluru-64

Abstract:

A nano composite is a composite material, in which one of the components has at least one dimension that is around 10^{-9} m. Nano composites are materials that have a solid structure in which the distance between the phases is leastwise formed of a dimension with nanoscale size and general form of an inorganic matrix set in the organic phase, or vice versa, from an organic matrix set in the inorganic phase. Owing to their advantageous properties, nano composites find wide ranging applications not only in chemistry, but also in every sector like, drug delivery, tissue engineering, semiconductor devices, solar cells, water treatment processes etc. In recent years, a large number of nano composites have been reported which are widely applied in the treatment of waste waters. The potential of these materials has been demonstrated by achieving separations of several metal ions in order to prove their applications in environmental and analytical chemistry.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INTERNATIONAL WEBINAR ON NANO MATERIALS

Date : 6th April 2023

Time : 2 P.M. (IST)

Organised by : DEPARTMENT OF CHEMISTRY
In Association with : IQAC

TULASI WOMEN'S COLLEGE KENDRAPARA, ODISHA-754211 (INDIA)

CHAIR PERSON
Dr. Amiya Kumar Mohanty
Former Additional Director
DHE, Odisha
&
G.B. President, TWC, Kendrapara

KEY NOTE SPEAKER
Dr. Amita Somya
Associate Professor
Department of Chemistry
Presidency University
Bengaluru-64 (India)

INVITED SPEAKER
Dr. Shashanka Rajendrachari
Department of Metallurgical and
Materials Engineering
Bartin University
Turkey

PATRON
Dr. Pramilarani Behera
Principal
TWC, Kendrapara

CONVENOR
Sri. Sanat Kumar Pradhan
Lecturer in Chemistry
TWC, Kendrapara

CO-ORDINATOR
Dr. Mathuri Charan Nayak
IQAC

CO-CONVENER
Mrs. Ipsamayee Bhuiyan
Lecturer in Chemistry
TWC, Kendrapara

Registration Link : https://forms.gle/6RJn8QLE1enu4Aya8

E-Certificate will be provided to each participant

PROGRAMME

ONE DAY INTERNATIONAL WEBINAR ON "NANO MATERIALS"

Organised By :

DEPARTMENT OF CHEMISTRY, TULASI WOMEN'S COLLEGE, KENDRAPARA

Date & Time : 6th April 2023 at 02:00 P.M. (IST)

Welcome Speech	Patron **DR. PRAMILARANI BEHERA** PRINCIPAL, TWC, KENDRAPARA	02:00 P.M.
Theme Presentation	Convenor **MR. SANAT KU. PRADAHAN** Lecturer in Chemistry, TWC, KENDRAPARA	02:20 P.M.
Elementary Speech	Chairperson **DR. AMIYA KUMAR MOHANTY** Former Additional Director, DHE, Odisha & G.B President, TWC, Kendrapara	02:30 P.M.
Purpose of Webinar	Co-ordinator **DR. MATHURI CHARAN NAYAK** IQAC	02:40 P.M.
Nano Composite and their Application	Keynote Speaker **DR. AMITA SOMYA** Associate Professor of Chemistry Presidency Universirty, Bengaluru, India	02:50 P.M.
Fabrication of Nano Structured Alloys	Invited Speaker **DR. SHASHANKA RAJENDRA CHARI** Department of Metallurgical & Materials Engineering Bartin University, Turkey	03:25 P.M.
Question & Answer Session	Convenor **MR. SANAT KUMAR PRADHAN** Lecturer in Chemistry TWC, Kendrapara	04:00 P.M.
Vote of Thanks	**MR. NITYASUNDAR MANIK** IQAC Member TWC, Kendrapara	04:10 P.M.