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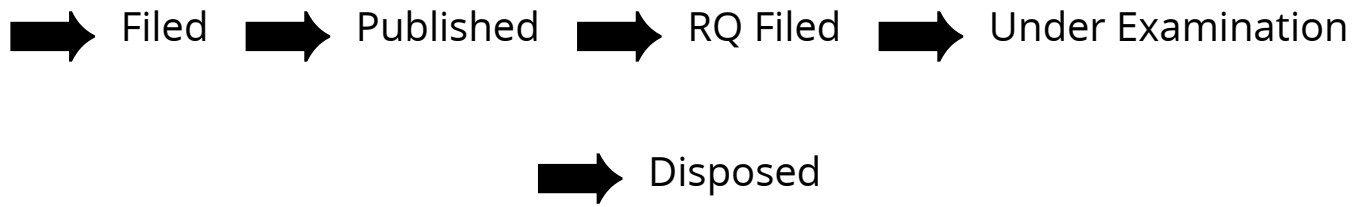


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TITLE OF INVENTION	OPTICAL PARAMETERS OF GALLIUM NITRIDE DOPED FERRITE POLYPYRROLE NANOCOMPOSITES
FIELD OF INVENTION	BIO-MEDICAL ENGINEERING
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(54) Title of the invention : OPTICAL PARAMETERS OF GALLIUM NITRIDE DOPED FERRITE POLYPYRROLE NANOCOMPOSITES

<p>(51) International classification :G01N0033340000, G01N0021840000, G01N0021410000, G01N0021330000, G01N0021030000</p> <p>(86) International Application No :NA Filing Date :NA</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number :NA Filing Date :NA</p> <p>(62) Divisional to Application Number :NA Filing Date :NA</p>	<p>(71)Name of Applicant :</p> <p>1)Dr. I. Rajani, Assistant Professor/ Department of H&S, VNRVJIET. Address of Applicant :VNRVJIET, Bachupally, Hyderabad, Telangana-500090. -----</p> <p>2)Dr.C. Udaya Kiran, Professor/ Department of Mechanical Engineering, JBIET. 3)Dr.V. Brahmaji Rao, Professor, CNST, Department of Physics, GVPCE (Autonomous). Name of Applicant : NA Address of Applicant : NA</p> <p>(72)Name of Inventor :</p> <p>1)Dr. I. Rajani, Assistant Professor/ Department of H&S, VNRVJIET. Address of Applicant :VNRVJIET, Bachupally, Hyderabad, Telangana-500090. -----</p> <p>2)Dr.C. Udaya Kiran, Professor/ Department of Mechanical Engineering, JBIET. Address of Applicant :JBIET, Moinabad, Hyderabad, Telangana-500075. -----</p> <p>3)Dr.V. Brahmaji Rao, Professor, CNST, Department of Physics, GVPCE (Autonomous). Address of Applicant :CNST, GVPCE (Autonomous), Madhurawada, Visakhapatnam, A.P-530045. -----</p>
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(57) Abstract :

Abstract: Optical parameters of Gallium nitride ferrite and doped polypyrrole nanocomposites (GaNFe₂O₃-PPY) prepared by using Impregnation technique with different contents of (3%, 10%, 30% by weight) were studied. The gallium nitride ferrite was prepared by sol-gel technique. The UV-Vis characterization was employed to study the absorption spectra and band gap of gallium nitride ferrite samples and their corresponding nano composites. It was observed that the absorption bands for Gallium nitride ferrite are around 240 nm, 260 nm and 430 nm. For GaNFe₂O₃-PPY composites the absorption bands are shifted towards the lower wavelength side. The band gap values from Tauc's plot were calculated and observed that with increase in dopant concentration in Gallium nitride ferrite, there is a decrease in band gap. For nano composites as the concentration of polypyrrole is increased, the band gap is decreased and the wavelength is red shifted. The parameters refractive Index, absorption coefficient, extinction coefficient, optical conductivity, theoretical electrical conductivity, dielectric constant, optical Dielectric constant, metallization criteria and reflectance are studied for all the synthesized samples.

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