

**EVALUATION OF EUROPIUM DOPED GADOLINIUM OXIDE  
AND ORTHOVANADATE NANOSYSTEMS AND THEIR  
BIOPHYSICAL RELEVANCE**

*A thesis submitted  
in partial fulfillment of the requirements for the degree of*

*Doctor of Philosophy*

**By**

**Aftab Ansari**

Registration No. TZ155677 of 2015



**School of Sciences  
Department of Physics  
Tezpur University  
Napaam, Tezpur - 784028  
Assam, India**

**JULY 2022**