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**NAAC – Cycle – 1  
AISHE: U-0967**

**Criterion- 3**

**R,I & E**

**KI 3.3**

**M 3.3.1**

3.3.1

Institution has created an ecosystem for innovations, Indian Knowledge System (IKS) including awareness about IPR, establishment of IPR cell, Incubation centre and other initiatives for the creation and transfer of technology/knowledge and the outcomes of the same are evident

### Additional Information INFED



Figure 1: online resource search home page- INFED

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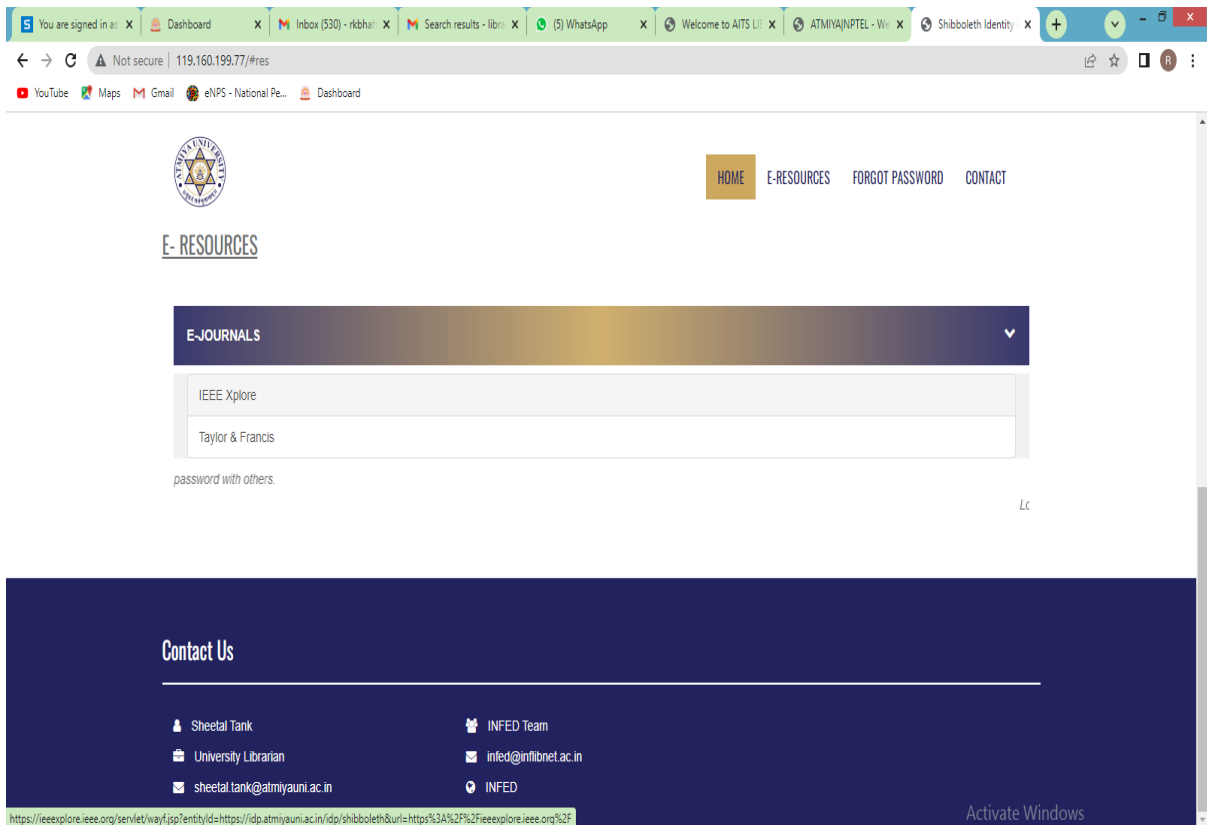


Figure 2: E- resource search page- INFED

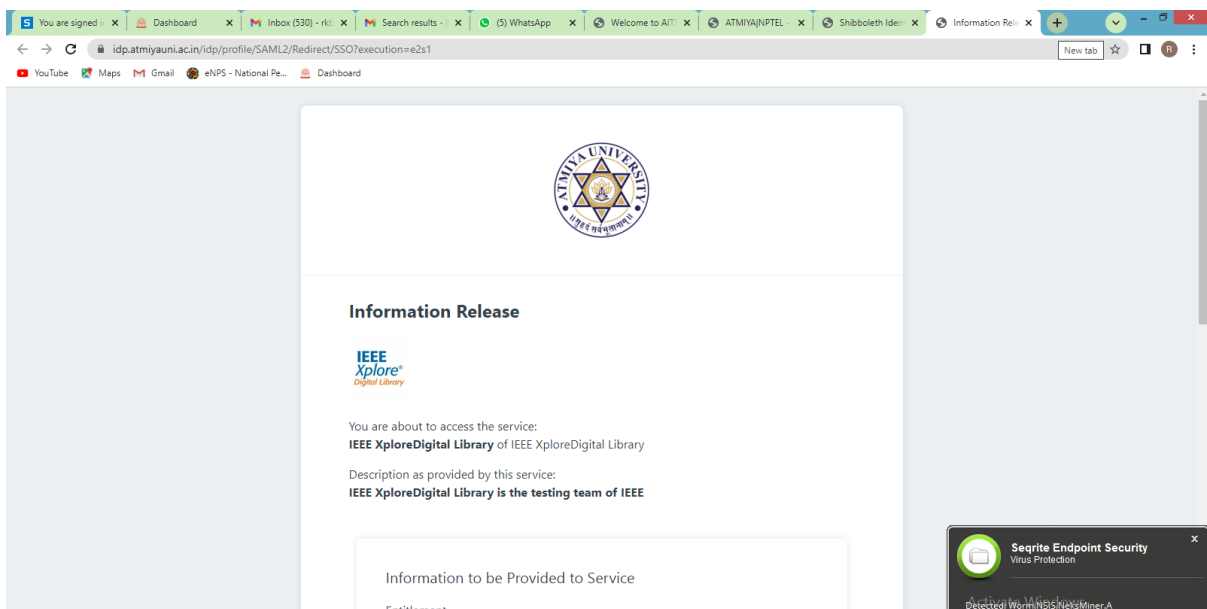


Figure 3: E- Journals IEEE search page- INFED

  
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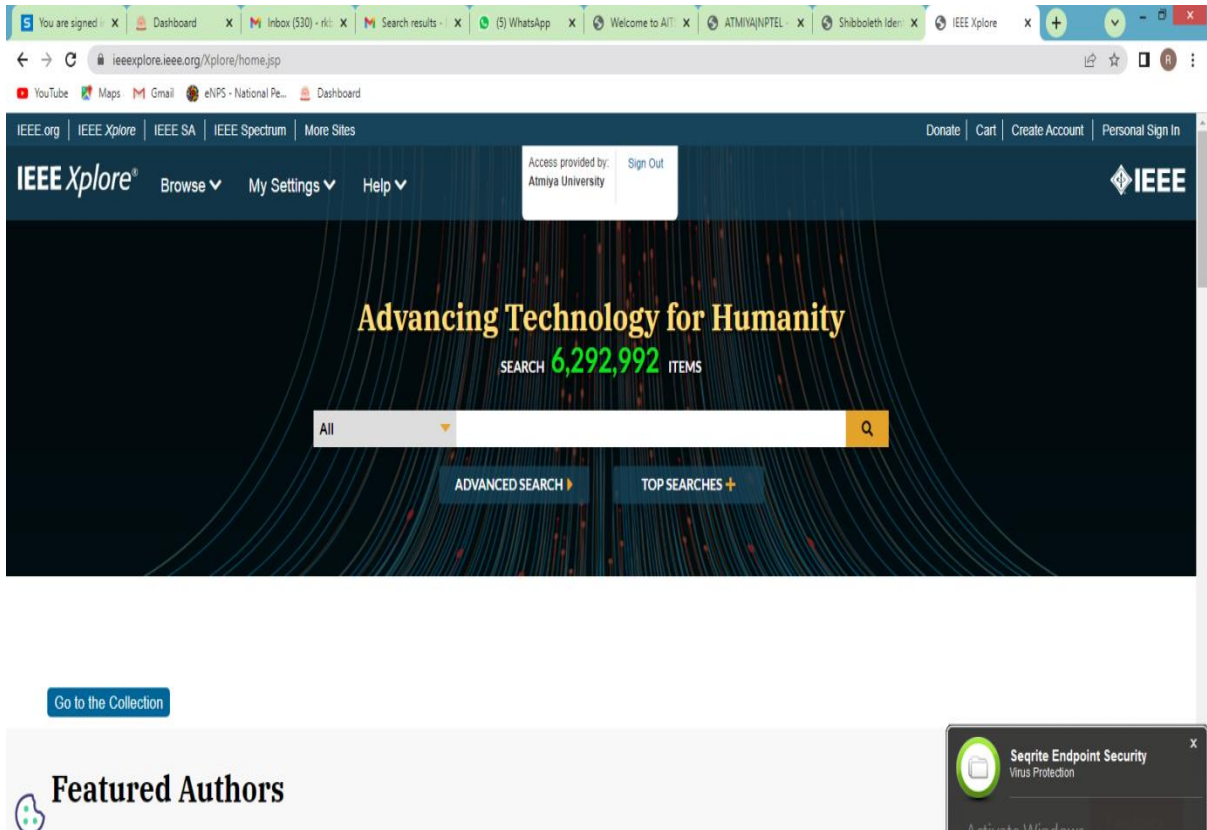
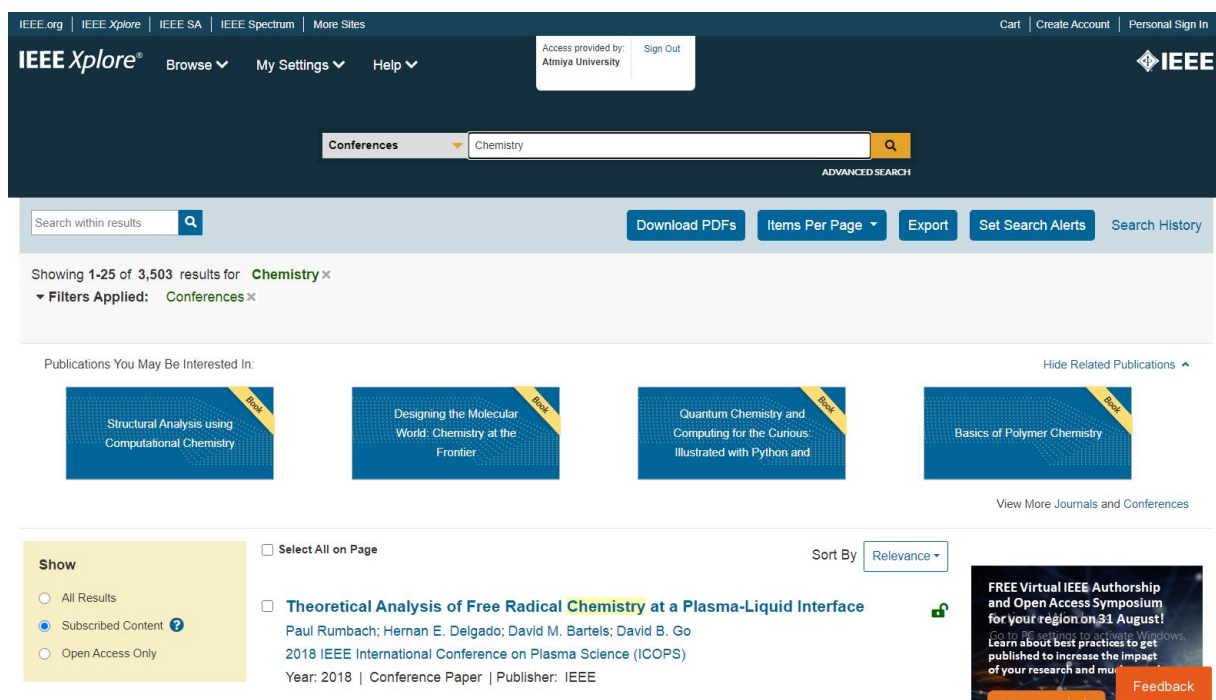


Figure 4: IEEE Home page- INFED

  
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Paul Rumbach; Hernan E. Delgado; David M. Bartels; David B. Go  
2018 IEEE International Conference on Plasma Science (ICOPS)  
Year: 2018 | Conference Paper | Publisher: IEEE

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Figure 5: Chemistry subject conferences paper search in subscribe content IEEE Xplore online resource



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**Theoretical Analysis of Free Radical Chemistry at a Plasma-Liquid Interface**

Publisher: IEEE Cite This PDF

Paul Rumbach; Hernan E. Delgado; David M. Bartels; David B. Go All Authors

42 Full Text Views

Abstract

**Abstract:**  
Low temperature plasma can be used to generate a variety of free radicals in an aqueous environment, and the resultant chemistry has found applications in chemical synthesis, biology, water purification, and medicine. In this work, we focus on two plasma-produced radicals: the solvated electron ( $e_{aq}^-$ ) and the hydroxyl radical ( $OH_{aq}$ ). Both radicals have been studied for several decades using pulse radiolysis techniques, and many of their relevant parameters, such as diffusion coefficients and reaction rate constants, are well known for the liquid phase<sup>1</sup>. Using these parameters, we analytically predict many important features of the interfacial chemistry by solving reaction-diffusion equations for the radicals in the liquid phase. For example, we derive approximate spatial profiles for the concentration of  $e_{aq}^-$  and  $OH_{aq}$  in terms of various plasma parameters. Our model also sets hard limits on the radical concentration and penetration depth into the solution, and it is able to predict various experimentally observed trends, such as the dependence of  $H_2O_2$  yield on solution pH<sup>2</sup>. Overall, this work elucidates some of the dominant

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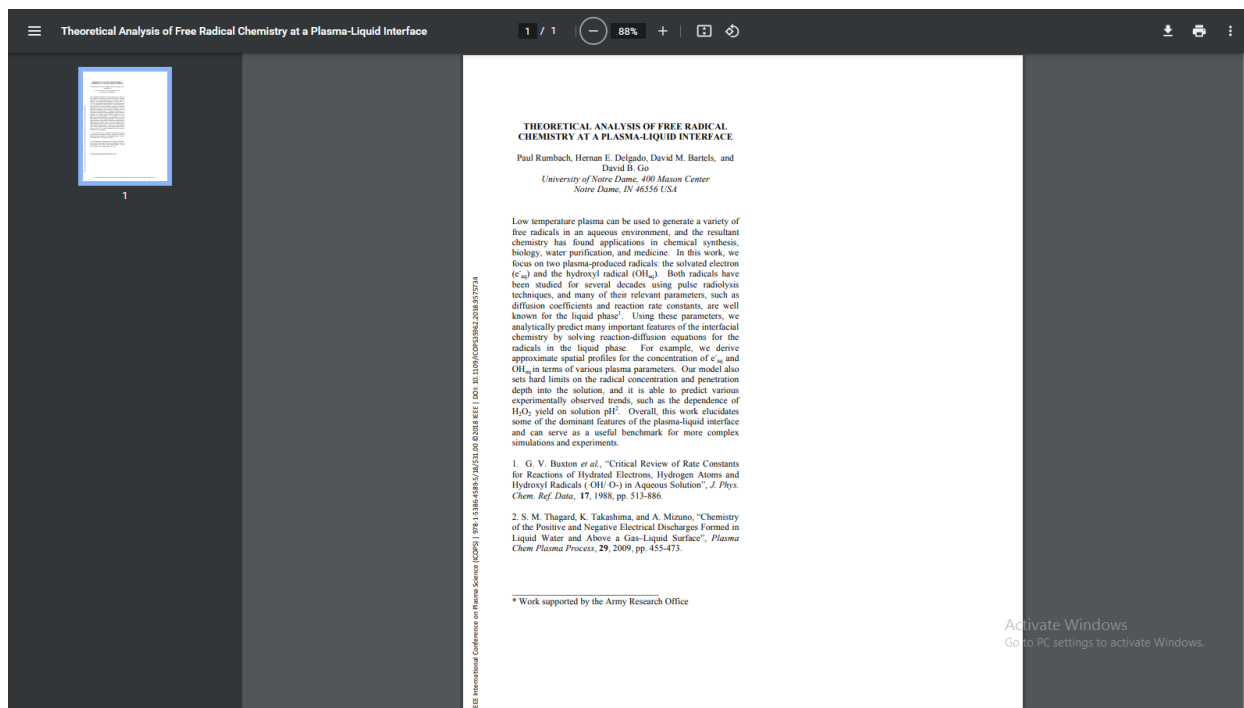


Figure 7: Chemistry subject conferences paper full text in subscribe content IEEE Xplore online resource

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