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EDITORIAL NOTE

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In difficult times, it is with great pleasure that we offer the community the third issue of the *Quarks – Brazilian Electronic Journal of Physics, Chemistry and Materials Science*.

Given the broad scope of the Quarks periodic, a range of experts in their fields of study provides their research from fundamental science to materials with biological and optical applications.

In addition to studies developed by Brazilian groups, researchers from countries such as Spain, France, Germany, Russia, and Switzerland have contributed to this present issue. This edition brings important contributions in the areas of Spintronics and Micromagnetic Simulations, modeling of reaction surfaces and a physical-mathematical model for confined fermions using elements of Quantum Electrodynamics (QED) and Quantum Chromodynamics (QCD).

Molecular Dynamics and Electron Dynamics are a highlight in this volume. The importance of a full dimension analysis of chemical reactions to obtain the rate constants is discussed in “On apparent barrier-free reactions”, while molecular dynamics of reactions at low temperatures using statistical models are reported in the study “The Dynamics of the $S(^1D)+H_2/D_2$ Reactions at Low Temperature via Statistical Simulations”. In the work “An Impurity Effect for the Rates of the Interparticle Coulombic Decay” through electron dynamics calculations involving quantum dots (QD) the presence of impurities on the ionization properties and process rate of the interparticle Coulombic decay is investigated. In addition, by means of Density Functional Theory (DFT) electronic structure calculations, the Ultraviolet-Visible spectrum (UV-Vis) of thyroxine molecule is firstly reported in “Thyroxine: A Theoretical Study of the Vibrational and Electronic Properties”.

Two experimental works of great relevance are contained in this volume. The study “A new matrix of MALDI-TOF MS derivative of 9-aminoacridine for lipid identification in positive ions mode” investigated the use of TNA as a matrix for direct analysis of lipids in positive ion mode by MALDI-TOF MS. The work entitled “On the influence of low silica content on phosphates glasses doped with Erbium Ions” propose a new combination of phosphate glass properties of various modifiers to optimize the host matrix with rare earths and enable applications in optical fibers and amplifiers

The Editorial Committee sincerely thanks the authors, reviewers, and editorial staff for their arduous efforts, each of whom has made a unique contribution to the continued excellence of this volume. The editorial committee also thanks Prof. Zélia Ludwig for giving up the hand-made watercolour figure to compose the cover of this edition. This illustration is a watercoloured painting of the morphological structure of the new coronavirus

The world is going through a pandemic in addition to social and political setbacks. We know that doing science is of fundamental importance to face this situation. So we take the opportunity to reflect here on the need for investment in Brazilian Science as a way to improve life and solve countless problems faced every day.

Pandemic has accentuated the difficulties in all instances, increasing the distances and inequalities between the poor and the rich. All of a sudden, everyone had to reinvent their way of living and working. Many people lost their lives, their jobs and many were already facing extreme conditions of survival that worsened in this period.

We can say that within Science this can also be verified, analyzing the number of publications submitted in this journal we noticed that we had an increase in submissions in relation to other publications, but we must highlight that we had most of the theoretical work and submitted by men, and which makes us reflect on the effects of the pandemic on the productivity of a portion of the scientific community in times of pandemic and especially of women who remained at home during this period and felt the weight of the tasks and the care of their children and family. It is necessary to be aware of the effects that this will have on the academic career of these people in the long term and the extra work that we will have to continue a significant number of works published in the next volumes.

Before we finish this speech about the importance of science in our lives, we need to draw attention to the environmental problems arising from the increase in fires and deforestation that has been taking over the Amazon and that recently also reached the Pantanal.

Something needs to be done urgently to reverse this damage. And this can only be achieved with the awareness of society and the need for more investments in Science.