



# THE ICPEACKER

Newsletter of the XXIX International Conference on Photonic, Electronic and Atomic Collisions. July 22-28, 2015 – Toledo, Spain

N°5 Tuesday, July 28<sup>th</sup>



CONFERENCE DINNER



## A TALE OF TWO PARTICLES ( $e^+$ , $e^-$ )

Do not lose the plenary lecture by Prof. Stephen J. Buckman. The talk, which will give an overview of low-energy electron and positron interactions, is sponsored by the European Physical Journal D

## SHELDON DATZ PRIZE: A CONVERSATION WITH JAYANTA KUMAR SAHA



*Thank you for your time, and congratulation for this recognition. When did you understand you wanted to become a professional scientist?*

Actually, I cannot define any exact point of time for such realization. During my course of undergraduate and postgraduate studies, I get attracted towards the philosophy of the subject through its historical evolution. Thus I decided to do some work on the recent problems to get the flavor of the front-line research and get

involved in such a way that now I cannot think of any other alternative but to do research in the future.

**What are your main research interests? What do you find most exciting about them?**

At present, my main research interest is on the development of theoretical models for structure calculations of atoms, ions and exotic systems under various types of external environments such as pressure confinement, fullerene cage confinement, quantum cavity confinement, weakly and strongly coupled plasma, quantum and complex dusty plasma confinements etc. So far I have got some experience in the estimation of the spectral properties of few-body systems using *ab-initio* quantum chemical methods, especially in the framework of variational method and stabilization method, by using explicitly correlated wave function expanded in Hylleraas coordinates. I have the plan in mind to extend such studies to heavy atoms and small molecules in future. The reason I choose the field of few-body physics is to understand the extreme

importance of electroncorrelation on its structural and spectral properties. Few-body systems provide an ideal platform to test the accuracy of the *ab-initio* correlation-consistent quantum chemical methods by producing nonrelativistic benchmark data. I feel excited about the physics of confined systems due to the tunability of their quantum properties such as Ionization-potential depression, level crossing, evolution of quasi-bound states, etc. by changing the parameters of the external confinements in case of atoms/ions embedded in different environments etc. For obvious reasons, such studies have immense importance in the field of atomic physics.

**What are your plans for the future?**

I want to extend my research in related disciplines of fundamental interest (e.g. Efimov states in cold atoms, quantum entanglement entropies of identical constituent particles in free and confined three-body systems) and will try to establish my career as a professional physicist.

*Dr. Saha, thank you very much for your perspective, and best wishes for your career.*

TOMORROW SHUTTLES TO MADRID  
AND SAN SEBASTIAN

Remember to be on time for the shuttle, if you reserved the service.

THANK YOU!

For coming to Toledo and contributing with great science to the XXIX ICPEAC. See you in 2017 in Cairns, Australia, for the XXX ICPEAC!

T.L.O.C.



SAN SEBASTIAN  
(E2E~POL)

TOLEDO

MADRID