

# SAMYAK DHOLE

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## SUMMARY

Student of Chemistry and Electronics interested in the development of new materials and seeking to apply for a semester-long project course. Proficient at conducting literature reviews to identify potential research problems and finding approaches to solve them. Has experience in both experimental and theoretical research.

## SKILLS

- UV-Visible Spectroscopy
- Fluorescence Spectroscopy
- IR Spectroscopy
- Powder X-ray diffraction
- Ab initio quantum chemistry methods
- Thermogravimetric Analysis
- Cyclic Voltammetry
- Hydrothermal Synthesis
- Sol-gel Synthesis
- Linux shell scripting

## WORK HISTORY

### Synthesis of multiferroic nanocomposites for supercapacitors, photocatalysis and Lithium-ion battery applications.

**Dr. N.N. Ghosh** - Associate Professor, Department of Chemistry, BITS Pilani Goa 08/2016 - 12/2016

- Synthesis of inorganic perovskite composite of  $\text{BiFeO}_3$  and  $\text{BaTiO}_3$  by EDTA method
- Operated Powder XRD
- DFT study of  $\text{BiFeO}_3$  using planewave methods - Poster presented in RSC symposium held at BITS Pilani Goa

### DFT study on fluorinated derivatives of Polymers of thiophene, selenophene, furan and tellurophene for organophotovoltaic application.

**Dr. Roy P. Paily** - Head, Center for Nanotechnology, IIT Guwahati 05/2016 - 07/2016

- Reviewed the literature on BHJ devices and identified key research problems
- Used Gaussian09 to study various conducting polymers withing DFT framework

### Ab initio computational study of 3-(2-ethynylcyclopropenylidene) propiolonitrile

**Dr. V.S. Thimmakondur** - Assistant Professor, Department of Chemistry, BITS Pilani Goa 01/2015 - 05/2015

- Literature Review of carbenes found in interstellar clouds
- Comparative computational study of isomers of  $\text{HC}_3\text{N}$  via MP2, CCSD and CCSD(T) methods using CFOUR.

### DFT study on the stability and electronic properties of bimetallic alkaline earth and boron clusters of the series $\text{Al}_x\text{Mg}_3$ and $\text{B}_x\text{Mg}_3$

**Debesh R. Roy** - Assistant Professor, Department of Applied Physics, SVNIT Surat 05/2013 - 07/2013

- Contributions published and acknowledged in: Roy, Debesh R. "Atomic Clusters: A Unique Building Motif for Future Smart Nanomaterials." World Academy of Science, Engineering and Technology, International Journal of Chemical, Molecular, Nuclear, Materials and Metallurgical Engineering 9.12 (2015): 1257-1260.

### Winter Industrial training in the chemical procedures involved in Quality Assurance and Control (Q.A.C.) and Instrumentation involved in the field

**Oil & Natural Gas Corporation Ltd.** - Hazira, Surat, Gujarat 12/2015 - 01/2016

- Learnt various experimental methods used in Quality Control of effluents.
- Learnt various experimental methods used in Quality Assurance and Control at different stages of the refining process.

### Practice School I (Industrial Training Course)

**Krishna Ghosh, East India Commercial Co. Ltd** - Andhra Pradesh 05/2014 - 07/2014

- Demonstrated a viable experimental scheme for implementing IJO standard 98/01 in quality control department.
- Proposed strategies for the implementation of quality control measures like Quality Circles.

## EDUCATION

**Master of Science:** Chemistry (Hons.)

**BITS Pilani** - Goa, India. 2013 - Current

**Bachelor of Engineering:** Electronics and Instrumentation (Hons.)

**BITS Pilani** - Goa, India 2013 - Current

**Program Description :** Five Year Dual Degree Course

**Current Semester :** Fourth Year, Second Semester

## LANGUAGES

- English (Fluent)
- Hindi
- French (Basic)
- Bengali (Native speaker)