
Dr. PALLAVI S. RAOTE

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ACADEMIC QUALIFICATIONS

- **Ph.D. (Physics):** 2009, University of Mumbai, INDIA
Dissertation title: Development of a simple pulser driven repetitive TE CO₂ laser and its applications in surface cleaning processes.
- **M.Sc. (Physics):** 2001; University of Mumbai, INDIA (63.60%, 1st Class)
- **Advance Diploma in Computer Software & System Analysis:** 2000; Technical board of Maharashtra, INDIA (67.00%, 1st class)

AWARDS / Honours

- Department of Atomic energy (DAE), INDIA - Research Fellowship for year 2004-2009.
- Indian Academy of Sciences (IASc), Bangalore - Summer Research Fellowship June – Aug 2012

PROFESSIONAL EXPERIENCE

Research Publications:

International Journals : **12** National level conferences : **11**

Designation	Institute	Duration
Assistant Professor	K.J. Somaiya College of Science and Commerce, Vidyavihar, Mumbai	4 th Jan 2014 onward (3 years 4 months)
Assistant Professor	Pillai HOC Engineering College, Rasayani.	Sep. 2010 - Dec 2013 (3 years 3 months)
Lecturer	VJTI, Mumbai	Nov 2009 - Sept 2010
Research Scholar	L&PTD, Bhabha Atomic Research Center, Mumbai	April 2004 - 2009
Lecturer	Dept. of Physics, D. G. Ruparel Collage of Arts, Science and Commerce,	Nov 2001 – April 2004

- **Research Interest :**

- **Field of Research:** Repetitive TE gas lasers and laser assisted surface cleaning and nanoscience

- Summer Research Project (June 2012-Aug2012): Indian Institute of Science Education and Research, Pune

Research Project title : Understanding the physics of nucleation and growth of CdTe Nanoparticles for Device applications

- Mumbai University Minor Research Project (2017-18):

“Synthesis and characterization of core-shell semiconductor nanoparticles”

- **Major Phenomenon Studied:**

- Designing high voltage pulser circuits for Gas lasers.
- Development and characterization of TE CO₂ gas lasers and related studies.
- Repetitive operation of TEA CO₂ lasers and related studied.
- Laser assisted surface cleaning: Physical phenomenon, effect of various laser parameter and related studies (including study of surface morphology of substrate).
- Synthesis and characterization of semiconductor nanoparticles.
- Study of size controlling parameters in synthesis of semiconductor nanoparticles.
- Core Shell Semiconductor nanoparticles

- **Computer Skills:**

- Programming languages (PASCAL, 'C', C++ programming),
- data analysis software (Origin 7.5),

Also well familiar with Assembly language of Microprocessor-8085 and Microcontorller-8051, PIC microcontroller.

List of Publication in International Journals

1. "Towards a triggerable switchless TEA CO₂ laser" Gautam Patil, **Pallavi Raote**, J. Padma Nilaya and D. J. Biswas, (2011)
2. "On the repetitive operation of a self-switched transversely excited atmosphere CO₂ laser" **Pallavi Raote**, Gautam Patil, J. Padma Nilaya and D. J. Biswas, **Pramana** 75, 5 (2010)
3. "Enhanced efficiency of a mutually coupled parallel spark preioniser", Gautam C. Patil, **Pallavi Raote**, J. Padma Nilaya, and D. J. Biswas, In Press, **Optics Communication**, (2009)
4. "Simultaneous closure of multiple high voltage parallel spark channels without switch: A parametric study", **Pallavi Raote**, Gautam Patil, J. Padma Nilaya, and D. J. Biswas, **Applied Physics Letters** 93, 1 (2008)
5. "Switch-less operation of a TEA CO₂ laser with extended electrodes" **Pallavi Raote**, Gautam Patil, M.B. Sai Prasad, J.P. Nilaya, D.J. Biswas, **Optics Communication** 281, 2213 (2008)
6. "Laser Assisted Decontamination- A Wavelength Dependent Study", J. Padma Nilaya, **Pallavi Raote**, Anniruddha Kumar, D. J. Biswas, **Applied Surface Science** 254, 7377 (2008).
7. "Repetitive operation of a helium-free mini TEA CO₂ laser" Aniruddha Kumara, J. Padma Nilaya, M.B. Sai Prasad, **P. Raote**, D.J. Biswas, **Optics & Laser Technology** 40, 223 (2008).
8. "Effect of delay in the operation of He-free TEA CO₂ laser with sequential and parallel spark preioniser" Aniruddha Kumara, J. Padma Nilaya, M.B. Sai Prasad, **Pallavi Raote**, D.J. Biswas, **Optics & Laser Technology** 40, 1068 (2008).
9. "Switching of a TEA CO₂ laser with its own UV emitting parallel spark channels", J. Padma Nilaya, **Pallavi Raote**, Gautam Patil, D. J. Biswas, **Optics express** 15, 129 (2007)
10. "Study of laser assisted decontamination of commonly used clad surfaces", J. P. Nilaya, **Pallavi Raote**, M. B. Sai Prasad and D. J. Biswas, **Journal of Laser Application** 18, 294 (2006)

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11. “Switch-less operation of a TEA CO₂ laser”, D. J. Biswas, J. Padma Nilaya, M. B. Sai Prasad, **Pallavi Raote**, *Optics Express* 13, 9636 (2005)

List of Publication in Conference:

1. “On the repetitive operation of a self-switched TEA CO₂ laser” **Pallavi Raote**, G C Patil, J. P. Nilaya and D. J. Biswas, National Laser Symposium, BARC, Mumbai (2010)
2. “Self switched Parallel Spark Preioniser: Dependence of Simultaneous Closure On Discharge Capacitance, Number of Mutually Coupled Turns and the Type of Core”, **Pallavi Raote**, Gautam C Patil, J. P. Nilaya and D. J. Biswas, National Laser Symposium, LASTEC, Delhi (2009)
3. “Enhanced Efficiency of a Mutually Coupled Parallel Spark Preioniser”, Gautam C Patil, **Pallavi Raote**, J. P. Nilaya, D. J. Biswas, National Laser Symposium, LASTEC, Delhi (2009)
4. “Switch-less Operation of a TEA CO₂ Laser with Extended Electrodes” **Pallavi Raote**, Gautam Patil, M. B. Sai Prasad, J. P. Nilaya, D. J. Biswas, National Laser Symposium, Baroda (2007)
5. “Towards A Triggerable Switch-Less Laser”, Gautam Patil, **Pallavi Raote**, M. B. Sai Prasad, J. P. Nilaya, D. J. Biswas, National Laser Symposium, Baroda, (2007)
6. “Switch-less operation of preionising parallel spark channels of a conventional TEA CO₂ laser”, **Pallavi Raote**, Gautam Patil, J. Padma Nilaya, and D. J. Biswas, National Laser Symposium, RRCAT, Indore (2006)
7. “Switching of a TEA CO₂ laser by its own UV emitting parallel spark channels”, J. Padma Nilaya, **Pallavi Raote**, Gautam Patil, D. J. Biswas, National Laser Symposium, RRCAT, Indore (2006)
8. “Laser assisted decontamination – wavelength dependent study”, J. Padma Nilaya, **Pallavi Raote**, Anniruddha Kumar, D. J. Biswas, National Laser Symposium, RRCAT, Indore (2006)
9. “A study of delay between pre and main discharges in the operation of helium free TEA CO₂ laser” Aniruddha kumar*, J.P. Nilaya, M. B. Sai Prasad, **Pallavi Raote** and D.J. Biswas, National Laser Symposium-05, VIT, Vellore, (2005) .
10. “Laser assisted cleaning of UO₂ contaminated Zircaloy surface”, J. Padma Nilaya, **Pallavi Raote**, M. B. Sai Prasad, D. J. Biswas and Anniruddha Kumar National Laser Symposium-05, VIT, Vellore, (2005).
11. “Dependence of laser assisted cleaning of clad surfaces on the laser fluence”, J. P. Nilaya, **Pallavi Raote**, M. B. Sai Prasad, D. J. Biswas and Aniruddha Kumar, INSAC, BARC, Mumbai (2005)

