

CURRICULUM VITAE

Dr. Ramesh Bhausaheb Dateer

(Ramanujan Fellow-2017-2023)

Personal Profile:

Awards From DST, Govt. of India

Ramanujan Fellowship-2017: (File No: File No: SB/S2/RJN-042/2017)

Project Title: Development of New Molybdenum-Isonitrile Complex Catalyzed Processes and its Application in Basic Chemistry

Early Career Research Award-2018: (File No: ECR/2017/002207, <https://www.serbonline.in/SERB/LoginPage>)

Project Title: A Novel Approach for the Synthesis of Privileged Structural Motifs of the Drug Molecules and Natural Products: The Transition Metal Catalyzed C–H Activation Strategies and It's Applications

Present address

Centre for Nano and Material Sciences
Jain Global Campus, Jain University
Jakkasandra Post, Kanakapura,
Ramanagara-562112, Bangalore Rural
Karnataka, India

Permanent address

: A/P-Ekrukhe, Tal-Rahata, Dist-Ahmednagar, State-
Maharashtra (INDIA), Pin-413719,
Mob: +919226136942

E-mail

: rameshd321@gmail.com

Mobile No:

: +919518598684

Date of birth

: August 12th, 1982

Nationality

: Indian

Sex & Marital Status

: Male & Married

Caste

: OBC

Academic profile:

Associate Professor

Catalysis and Organic Synthesis Group
Centre for Nano and Material Sciences
Jain University, Bangalore-562112,
Karnataka, India

Group Homepage: <https://cnms.jainuniversity.ac.in/Faculty-Ramesh-Dateer.htm>

Group Strength: Phd = 2 (ongoing), MS =4 (ongoing)

Total Impact Factor = 45.3, citation = >550, h-Index = 8

Postdoctoral Research Fellow (Oct. 2016 to May 2017)

Supervisor: Prof. Dr. Olivier Baudoïn
University of Basel, Switzerland

Research Area: “**Transition Metal Catalyzed New Sp³ C-H Activation Reactions**”

Postdoctoral Research Fellow (August, 2014 to July 2016)

Supervisor: Prof. Dr. Sukbok Chang

Center for Catalytic Hydrocarbon Functionalization IBS, Department of Chemistry, #3116,E6-4, KAIST, 291,
Daehalk-ro, Yuseong-gu, Daejeon, Republic of Korea, 305-701.

Research Area: “**Transition Metal Catalyzed New Sp² C-H Activation Reactions**”

Postdoctoral Research Fellow (March, 2013 to July 2014)

Supervisor: Prof. Dr. Rai-Shung Liu

Dean, College of Science, Department of Chemistry,
National Tsing Hua University, Hsinchu, Taiwan.

Research Area: “**Transition Metal Catalyzed New Organic Transformations**”

PhD. (Feb., 2009-March, 2013)

- **Dissertation Title: “Gold-catalyzed new organic transformations involving activation of C-C triple bond for the synthesis of N and O containing molecules”**

Supervisor: Prof. Rai-Shung Liu
Dean, College of Science, Department of Chemistry,
National Tsing Hua University, Hsinchu, Taiwan.

M.Sc. (2004-2006):

Organic chemistry (University of Pune, India)
Obtained **First class with Distinction**

Dissertation work: “Synthesis and characterization of some ‘Biologically active fluorinated pyrazolyl compounds”

B.Sc. (2001-2004):

Chemistry (University of Pune, India)
Obtained **First class with distinction,**

Research Experience:

Research Associate (10.2006 to 02.2009).
Glennmark Pharmaceutical Ltd, Navi-Mumbai
Department of Medicinal Chemistry
Experienced in Synthesis of New Chemical Entities (NCEs), SAR studies

Research Profile:

1st Postdoctoral research (April 13 to July 2014):

Adviser: Prof. Rai Shung Liu, Dean, College of Science, Department of Chemistry,
National Tsing Hua University, Hsinchu, Taiwan.

Research area: Catalysis and Organic Synthesis

2nd Postdoctoral research (August 2014 to July 2016):

Adviser: Prof. Sukbok Chang, Korea Advanced Institute of Science and Technology.(South Korea)
Research area: C (Sp²)-H functionalization.

3rd Postdoctoral research (Oct. 2016 to May 2017):

Adviser: Prof. Olivier Baudoin, University of Basel, Switzerland.
Research area: C (Sp³)-H functionalization.

Keywords: Gold catalysis, C-H Activation, Cycloaddition, Ynamides, Nitron etc.

Fellowships:

- Post-doctoral Fellowship from Swiss National Foundation, Switzerland, Oct. 2016 to May 2017
- Post-doctoral Fellowship from Institute of Basic Science, Korea, August, 2014 to July 2016.
- Post-doctoral Fellowship from National Science Council, Taiwan, March, 2013 to July 2014.
- National Tsing Hua University PhD Scholarship for International students, Taiwan, Feb. 2009 to Feb. 2013.
- Outstanding International Research Student Fellowship by National Tsing Hua University, Feb. 2011 to Feb. 2012.

Awards

Awarded by prestigious ‘**Ramanujan Fellowship**’ DST, SERB-Govt. of India 2018
Awarded by ‘**Early Carrier Research Award**’ DST, SERB-Govt. of India 2018
Awarded by ‘ Outstanding International Research Student by National Tsing Hua University, Taiwan 2011.

Conferences Attained:

- Participated in International Conference on Organometallics and Catalysis (ICOC 2018), Goa, India
- International Conference of IUPAC-2015 under the title '45th World Chemistry Congress' Aug 9-14 at Bexco, Busan, South Korea.
- Participated in "2015 CCHF (IBS-KAIST)-ITBM (Nagoya University) Joint Symposium" at KAIST, South Korea
- 3rd Workshop of Center for Catalytic Hydrocarbon Functionalizations, Institute of Basic Science (IBS), South Korea 2014.
- 4th Workshop of Center for Catalytic Hydrocarbon Functionalizations, Institute of Basic Science (IBS), South Korea 2014
- Participated in Institute of Basic Science (IBS) Research Conference 2014 'Linking Ideas, Expanding Knowledge'
- International Conference on 'Functional Organic Materials and Related Devices in 2012 - National Tsing Hua University (Taiwan).

Invited Talk:

- Delivered invited talk on "SET/NET Guidance for PG Students in Chemistry" at ASC College, Rahata, Pune University on January, 23rd – 24th, 2018
- Delivered invited talk on "Research Trends and Opportunities in Chemistry" at Tulajaram Chaturchand College, Baramati on Feb 2021
- Delivered Invited talk in National Webinar Organised by Department of Chemistry and IQAC on "Green Catalysis in Organic Synthesis" S.S.G.M College, Kopergaon, Pune University March 2021.
- Delivered invited talk in "International Conference on Chemistry, Environment and Energy (ICCEE-Feb.2019)" YC- College, Satara India
- Delivered Invited talk in "National e-Conference on Materials for Emerging Technologies (MET) – March 2021 at Solapur University

Patents:

- Biogenic Synthesis of Single Crystalline δ -phase Earth Abundant Metal-Oxide Nanoparticles Using Mango leaves extract and Its Applications Thereof (**Indian Patent, Filed, JBR 1138**)
- Green Synthesis of Sustainable and Cost-effective Mesoporous Metal Oxalate Dihydrate Nanoparticles using Purslane Leaves Extract and Its Applications Thereof (**Indian Patent, Filed, JBR 1148**)
- Green Synthesis of Ecological and Cost-effective Mesoporous Metal Oxide Nanoparticles using Areca Nut Husk Extract and Its Applications Thereof (Submitted)

Research papers published during Independent Carrier: (06. 2017- till date)

43. Limaye AS, Yhobu Z, Thrilokraj R, Budagumpi S, **Dateer RB***. Biogenically Synthesized Palladium Nanoparticles for Hydrogen Evolution Study: An Efficient Catalyst for 4-Nitrophenol Reduction and CC Coupling Reactions. Colloids and Surfaces A: Physicochemical and Engineering Aspects. **2024**:133555. <https://doi.org/10.1016/j.colsurfa.2024.133555>
42. Nandini R, Thrilokraj R, Kshirsagar UA, Hegde RV, Ghosh A, Patil SA, Malecki JG, **Dateer RB***. Facile access to 1, 2-disubstituted benzimidazoles and 2, 3-dihydro-1 H-perimidines using a biogenically

- synthesized single phase δ -MnO₂ NP catalyst and its dye removal study. *New Journal of Chemistry*. **2024**;48(3):1327-35. <https://doi.org/10.1039/D3NJ03803C>
41. Gopal AR, Joy F, Dutta V, Devasia J, **Dateer RB**, Nizam A. Carbon Dot-Based Fluorescence Resonance Energy Transfer (FRET) Systems for Biomedical, Sensing, and Imaging Applications. *Particle & Particle Systems Characterization*. **2024**;41(1):2300072. <https://doi.org/10.1002/ppsc.202300072>
40. Thrilokraj R, Yhobu Z, Budagumpi S, Małeckı JG, Ghosh A, Limaye AS, Nandini R, **Dateer RB***. Room-Temperature Synthesis of Biogenic δ -MnO₂ NPs for the Dehydrogenative Coupling of Diamines with Alcohols for Benzimidazole and Quinoxaline Synthesis: An Efficient Catalyst for Electrochemical Applications. *Langmuir: the ACS journal of surfaces and colloids*. **2023**;39(44):15474-86. <https://doi.org/10.1021/acs.langmuir.3c01749>
39. Ghosh A, Hegde RV, Limaye AS, Patil SA, **Dateer RB***. Biogenic synthesis of δ -MnO₂ nanoparticles: A sustainable approach for C-alkylation and quinoline synthesis via acceptorless dehydrogenation and borrowing hydrogen reactions. *Appl. Organomet. Chem.* **2023**;37(7):e7119. <https://doi.org/10.1002/aoc.7119>
38. Hegde RV, Bhondwe R, Sree Raj KA, Ghosh A, Rout CS, Patil SA, Sridhar B, **Dateer RB***. C–H Activation of Benzamides Using Biogenically Synthesized Pd@ CNTs Catalyst under External Ligand Free Condition: Access to Isoquinolones and A DFT Study of Phytochemicals. *ChemistrySelect*. **2023**;8(23):e202300673. <https://doi.org/10.1002/slct.202300673>
37. Sampatkumar HG, Rhakho N, Kandathil V, Kempasiddaiah M, Shirahatti AM, **Dateer RB**, Samal AK, Patil SA. Green Synthesis of Palladium Nanoparticles Immobilised on Graphitic Carbon Nitride as a Sustainable Nanocatalyst for the Reduction of Nitroarenes and Removal of Fluorinated Substances. *Catal. Lett.* **2023**:1-4. <https://doi.org/10.1007/s10562-023-04341-y>
36. Thrilokraj R, Hegde RV, Ghosh A, Limaye AS, Rode HB, Sridhar B, **Dateer RB***. A sustainable approach for nickel nanoparticles synthesis: expeditious access to N-heterocycles under heterogeneous condition and photophysical studies. *New J. Chem.* **2023**;47(17):8268-76. DOI <https://doi.org/10.1039/D3NJ00988B>
35. Nadargi JD, **Dateer RB**, Kalubarme RS, Truong NT, Pawar SH. A Novel Approach of Developing AgI Loaded Silica Aerogels for Possible Application as Cloud Seeding Material. *Silicon*. **2023**:1-7. <https://doi.org/10.1007/s12633-023-02454-y>
34. Hegde S, Nizam A, Vijayan A, **Dateer RB**, Krishna SB. Palladium immobilized on guanidine functionalized magnetic nanoparticles: A highly effective and recoverable catalyst for ultrasound aided Suzuki-Miyaura cross coupling reactions. *New J. Chem.* **2023**. DOI <https://doi.org/10.1039/D3NJ03444E>
33. Dhumal K, **Dateer RB**, Mali A. Recent Catalytic Advancements in Organic Transformations Using Biogenically Synthesized Palladium Nanoparticles. *Catal. Lett.* **2023**:1-23. <https://doi.org/10.1007/s10562-022-04258-y>
32. Antony AM, Kandathil V, Kempasiddaiah M, **Dateer RB**, Patil SA. Magnetic nanoparticles embedded hexagonal boron nitride tethered N-heterocyclic carbene-palladium (II): An efficient and reusable magnetic catalyst for fluoride-free Hiyama cross-coupling and 4-nitrophenol reduction reactions. *J. Phys. Chem. Solids*. **2023**;177:111283. <https://doi.org/10.1016/j.jpics.2023.111283>

31. Limaye AS, Alsaiani M, Shinde PV, Ghosh A, Jalalah M, Rout CS, Patil SA, Harraz FA, **Dateer RB***. Greener Approach for Pd–NPs Synthesis Using *Mangifera indica* Leaf Extract: Heterogeneous Nano Catalyst for Direct C–H Arylation of (Poly) Fluorobenzene, Hiyama Coupling Reaction and Hydrogen Evolution Reaction Study. *Catal. Lett.* **2023**;153(7):1988-2004. <https://doi.org/10.1007/s10562-022-04138-5>
30. Sampatkumar HG, Antony AM, Trivedi M, Sharma M, Ghate M, Baidya M, **Dateer RB**, Patil SA. In situ biosynthesis of palladium nanoparticles on banana leaves extract-coated graphitic carbon nitride: An efficient and reusable heterogeneous catalyst for organic transformations and antimicrobial agent. *Biomass Convers. Biorefin.* **2022**:1-22. <https://doi.org/10.1007/s13399-022-03222-5>
29. Ghosh A, Limaye AS, KN M, Patil SA, **Dateer RB***. Zn-Mediated Selective Reduction of Nitroarenes: A Sustainable Approach for Azoxybenzenes Synthesis. *Org Prep Proced Int.* **2022**;54(3):284-93.
28. Kempasiddaiah M, Raj KS, Kandathil V, **Dateer RB**, Sasidhar BS, Yelamaggad CV, Rout CS, Patil SA. Waste biomass-derived carbon-supported palladium-based catalyst for cross-coupling reactions and energy storage applications. *Appl. Surf. Sci.* **2021**;570:151156. <https://doi.org/10.1016/j.apsusc.2021.151156>
27. Ghosh A, Hegde RV, Rode HB, Ambre R, Mane MV, Patil SA, Sridhar B, **Dateer RB***. Catalyst-and Additive-Free Approach to Constructing Benzo-oxazine, Benzo-oxazepine, and Benzo-oxazocine: O Atom Transfer and C=O, C–N, and C–O Bond Formation at Room Temperature. *Org. Lett.* **2021**;23(21):8189-93. <https://doi.org/10.1021/acs.orglett.1c02895>
26. Kempasiddaiah M, Kandathil V, **Dateer RB**, Baidya M, Patil SA, Patil SA. Efficient and recyclable palladium enriched magnetic nanocatalyst for reduction of toxic environmental pollutants. *J. Environ. Sci.* **2021**;101:189-204. <https://doi.org/10.1016/j.jes.2020.08.015>
25. Prasad D, Patil KN, Manoorkar VK, **Dateer RB**, Nagaraja BM, Jadhav AH. Sustainable catalytic process for fructose dehydration using dicationic ionic liquid assisted ZSM-5 zeolite. *Mater. Manuf. Process.* **2021**;36(13):1571-8.
24. Hegde RV, Ong TG, Ambre R, Jadhav AH, Patil SA, **Dateer RB***. Regioselective Direct C2 Arylation of Indole, Benzothiophene and Benzofuran: Utilization of Reusable Pd NPs and NHC-Pd@ MNPs Catalyst for C–H Activation Reaction. *Catal. Lett.* **2021**;151:1397-405. <https://doi.org/10.1007/s10562-020-03390-x>
23. Prasad D, Patil KN, **Dateer RB**, Kim H, Nagaraja BM, Jadhav AH. Basicity controlled MgCo2O4 nanostructures as catalyst for viable fixation of CO2 into epoxides at atmospheric pressure. *Chem. Eng. Sci.* **2021**;405:126907. <https://doi.org/10.1016/j.ces.2020.126907>
22. Hegde RV, Ghosh A, Jadhav AH, Nizam A, Patil SA, Peter F, **Dateer RB***. Biogenic synthesis of Pd-nanoparticles using Areca Nut Husk Extract: A greener approach to access α -keto imides and stilbenes. *New J. Chem.* **2021**;45(35):16213-22. DOI <https://doi.org/10.1039/D1NJ02858H>
21. Ghosh A, Hegde RV, Gholap SS, Patil SA, **Dateer RB***. Green pathways for palladium nanoparticle synthesis: application and future perspectives. *Functionalized nanomaterials for catalytic application.* **2021**:303-28. <https://doi.org/10.1002/9781119809036.ch11>
20. Kempasiddaiah M, Kandathil V, **Dateer RB**, Sasidhar BS, Patil SA, Patil SA. Palladium-catalyzed denitrogenative cross-coupling of aryl halides with arylhydrazines under mild reaction conditions. *Transit. Met. Chem.* **2021**;46:273-81. <https://doi.org/10.1007/s11243-020-00443-3>
19. Kempasiddaiah M, Raj KS, Kandathil V, **Dateer RB**, Sasidhar BS, Yelamaggad CV, Rout CS, Patil SA. Waste biomass-derived carbon-supported palladium-based catalyst for cross-coupling reactions and energy storage applications. *Appl. Surf. Sci.* **2021**;570:151156. <https://doi.org/10.1016/j.apsusc.2021.151156>

18. Nadargi DY, Tamboli MS, Patil SS, **Dateer RB**, Mulla IS, Choi H, Suryavanshi SS. Microwave-epoxide-assisted hydrothermal synthesis of the CuO/ZnO heterojunction: a highly versatile route to develop H₂S gas sensors. *ACS omega*. 2020;5(15):8587-95. <https://doi.org/10.1021/acsomega.9b04475>
17. Kempasiddaiah M, Kandathil V, **Dateer RB**, Sasidhar BS, Patil SA, Patil SA. Immobilizing biogenically synthesized palladium nanoparticles on cellulose support as a green and sustainable dip catalyst for cross-coupling reaction. *Cellulose*. 2020;27:3335-57. <https://doi.org/10.1007/s10570-020-03001-3>
16. Ghosh A, Mane MV, Rode HB, Patil SA, Sridhar B, **Dateer RB***. Catalyst-Free Regioselective [3+ 2] Cycloadditions of α , β -unsaturated N-arylnitrones with Alkenes to Access Functionalized Isoxazolidines: A DFT Study. *Chem. Asian J.* 2020;15(6):899-903. <https://doi.org/10.1002/asia.201901754>
15. Shahini CR, Achar G, Budagumpi S, **Dateer RB**, Müller-Bunz H, Tacke M, Patil SA. Convenient and efficient Suzuki–Miyaura and Heck–Mizoroki cross-coupling reactions catalyzed by 1, 3, 4-trisubstituted-1, 2, 3-triazolium iodide and palladium salt systems. *J Coord. Chem.* 2019;72(3):528-49. <https://doi.org/10.1080/00958972.2019.1571583>
14. Hegde RV, Ghosh A, Patil SA, **Dateer RB***. Pd-nanoparticles catalyzed denitrogenative coupling of aryl halides with arylhydrazines: Greener approach for biaryls synthesis under ligand-free condition. *Tetrahedron*. 2019;75(52):130777. <https://doi.org/10.1016/j.tet.2019.130777>
13. Nadargi DY, **Dateer RB**, Tamboli MS, Mulla IS, Suryavanshi SS. A greener approach towards the development of graphene–Ag loaded ZnO nanocomposites for acetone sensing applications. *RSC adv*. 2019;9(58):33602-6. [10.1039/C9RA06482F](https://doi.org/10.1039/C9RA06482F)
12. Ghosh A, Hegde R, Makane VB, Sridhar B, Rode HB, Patil SA, **Dateer RB***. Transition metal-free functionalized hydration of alkynes: one-pot synthesis of fluorinated β -keto-imidates using Selectfluor. *Org. Biomol. Chem.* 2019;17(18):4440-5. <https://doi.org/10.1039/C9OB00527G>
11. Kempasiddaiah M, Kandathil V, **Dateer RB**, Sasidhar BS, Patil SA, Patil SA. Magnetite tethered mesoionic carbene-palladium (II): An efficient and reusable nanomagnetic catalyst for Suzuki–Miyaura and Mizoroki–Heck cross-coupling reactions in aqueous medium. *Appl. Organomet. Chem.* 2019;33(5):e4846. <https://doi.org/10.1002/aoc.4846>
10. Kandathil V, Koley TS, Manjunatha K, **Dateer RB**, Keri RS, Sasidhar BS, Patil SA, Patil SA. A new magnetically recyclable heterogeneous palladium (II) as a green catalyst for Suzuki–Miyaura cross-coupling and reduction of nitroarenes in aqueous medium at room temperature. *Inorg. Chim. Acta* 2018;478:195-210. <https://doi.org/10.1016/j.ica.2018.04.015>
9. Manjunatha K, Koley TS, Kandathil V, **Dateer RB**, Balakrishna G, Sasidhar BS, Patil SA, Patil SA. Magnetic nanoparticle-tethered Schiff base–palladium (II): Highly active and reusable heterogeneous catalyst for Suzuki–Miyaura cross-coupling and reduction of nitroarenes in aqueous medium at room temperature. *Appl. Organomet. Chem.* 2018;32(4):e4266. <https://doi.org/10.1002/aoc.4266>
8. Kandathil V, **Dateer RB**, Sasidhar BS, Patil SA, Patil SA. Green synthesis of palladium nanoparticles: applications in aryl halide cyanation and Miyama cross-coupling reaction under ligand free conditions. *Catal. Lett.* 2018;148:1562-78. <https://doi.org/10.1007/s10562-018-2369-5>
7. Kim Y, **Dateer RB**, Chang S. Borane-catalyzed selective hydrosilylation of internal ynamides leading to β -silyl (Z)-enamides. *Org. Lett.* 2017;19(1):190-3. <https://doi.org/10.1021/acs.orglett.6b03485>
6. **Dateer RB**, Chang S. Rh (III)-catalyzed C–H cyclization of aryl nitrones with diazo compounds: Access to N-hydroxyindolines. *Org. Lett.* 2016;18(1):68-71. <https://doi.org/10.1021/acs.orglett.5b03273>

5. **Dateer RB**, Chang S. Selective cyclization of arylnitrones to indolines under external oxidant-free conditions: Dual role of Rh (III) catalyst in the C–H activation and oxygen atom transfer. *J. Am Chem. Soc.* **2015**;137(15):4908-11. <https://doi.org/10.1021/jacs.5b01065>
4. Jadhav AM, Gawade SA, Vasu D, **Dateer RB**, Liu RS. ZnII-and AuI-Catalyzed Regioselective Hydrative Oxidations of 3-En-1-yne with Selectfluor: Realization of 1, 4-Dioxo and 1, 4-Oxohydroxy Functionalizations. *Chem- A. Eur. J.* **2014**;20(7):1813-7. <https://doi.org/10.1002/chem.201304322>
3. **Dateer RB**, Shaibu BS, Liu RS. Gold-Catalyzed Intermolecular [4+ 2] and [2+ 2+ 2] Cycloadditions of Ynamides with Alkenes. *Angew Chem Int. Ed.* **2012**;51(1):113-7. <https://doi.org/10.1002/anie.201105921>
2. **Dateer RB**, Pati K, Liu RS. Gold-catalyzed synthesis of substituted 2-aminofurans via formal [4+ 1]-cycloadditions on 3-en-1-ynamides. *Chem. Commun.* **2012**;48(57):7200-2. DOI <https://doi.org/10.1039/C2CC33030J>
1. Mukherjee A, **Dateer RB**, Chaudhuri R, Bhunia S, Karad SN, Liu RS. Gold-catalyzed 1, 2-difunctionalizations of aminoalkynes using only N-and O-containing oxidants. *J. Am Chem. Soc.* **2011**;133(39):15372-5. <https://doi.org/10.1021/ja208150d>

Patents:

1. **Dr. Ramesh B. Dateer**, Thrilokraj R., Arnab Ghosh, Rajeev V. Hegde “Metal-Oxalate Nanoparticles and Method for Synthesis Thereof” Filed *Application No- 202241055501*
2. **Dr. Ramesh B. Dateer**, Thrilokraj R., Arnab Ghosh, Rajeev V. Hegde, Dr. Digambar Y. Nadargi, Namrata P. Hota, Akshay S. Limaye, Nandini R., Iron oxide nanoparticles composition and method for synthesis thereof. Filed *Application No-202341032555*
3. **Dr. Ramesh B. Dateer**, Arnab Ghosh, Rajeev V. Hegde, Akshay S. Limaye ‘Metal-Oxide Nanoparticles and Method for Biogenic Synthesis Thereof’ *Application No-202241028666*

➤ **References:**

<p>1. Prof. Dr. Sukbok Chang (<i>Postdoc Adviser</i>) Professor and Director of Center for Catalytic C-H Functionalization, IBS, Dept. of Chemistry, KAIST, 291, Daehalk-ro, Yuseong-gu, Daejeon, Republic of Korea, 305-701, Tel. (+82)-42-350-2841 Fax: (+82)-42-350-8180 Email: sbchang@kaist.ac.kr</p>	<p>2. Prof. Dr. Rai-Shung Liu (<i>PhD Adviser</i>) Professor and Dean of college of Science, National Tsing Hua University, Dept. of Chemistry, 101, Sec. 2, Guang-Fu, Rd, 30013, Republic of Taiwan (R.O.C) Tel. (+886) 33385 Fax: 03-5711082 Email-rsliu@mx.nthu.edu.tw</p>	<p>3. Dr. S. K. Nataraj, FRSC Professor and Group Leader Centre for Nano and Material Science, Jain University, Bangalore-562 112 E-mail:sk.nataraj@jainuniversity.ac.in sknata@gmail.com</p>
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