

# CURRICULUM VITAE

Dr. Joydev Manna

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## Research Experiences

- **FRQNT Postdoctoral Fellow:** Université du Québec à Trois-Rivières, Quebec, Canada (August, 2017 – August, 2018) with Prof Jacques Huot  
Project: Hydrogen absorption after air exposure of transition metal doped TiFe alloys
- **TUBITAK Postdoctoral Fellow:** Middle East Technical University, Ankara, Turkey (December 2015 – December 2016) with Prof Saim Özkar  
Project: Transition metal (0) nanoparticles supported on the surface of magnetic oxide particles: Synthesis, characterization and catalytic use in hydrogen generation from the hydrolysis of ammonia borane
- **Research Associate:** IIT Bombay (June 2015 - December 2015) with Prof Pratibha Sharma  
Project: Hydrogen storage properties of complex hydrides

## Educational Background

Degree/Exam (year)	Institute / University/ Board	Branch /Specialization	%/ CPI
Ph.D. (2015)	Indian Institute of Technology Bombay (IIT Bombay)	Catalysis on Sodium Borohydride Hydrolysis	-
M.Sc. (2010)	Indian Institute of Technology Bombay (IIT Bombay)	Energy Science and Engineering	8.3
B.Sc. (2008)	Midnapore College, Vidyasagar University, West Bengal, India.	Chemistry (Hons.)	64.75%
12 <sup>th</sup> (2004)	Sevayatan Vidyalaya, (W.B.C.H.S.E.), India	Science	76.4%
10 <sup>th</sup> (2002)	Paramanandapur Jagannath Institution, (W.B.B.S.E), India	Physical Science, Life science, Mathematics, Hist, Geo etc.	71%

## Publications

### International Journal(s)

1. **J Manna**, B Tougas, J Huot, Mechanical activation of air exposed TiFe + 4 wt% Zr alloy for hydrogenation by cold rolling and ball milling, *Int. J. Hydrogen Energy*, **43**, 2018, 20795-20800

2. B Roy, A Hajari, V Kumar, **J Manna**, P Sharma “Kinetic model analysis and mechanistic correlation of ammonia borane thermolysis under dynamic heating conditions”, *Int. J. Hydrogen Energy*, **43**(22), 2018, 10386-10395
3. B Roy, A Hajari, **J Manna**, P Sharma, “Supported ammonia borane decomposition through enhanced homopolar B-B coupling” *Dalton Trans.*, **47**, 2018, 6570-6579
4. B Roy, **J Manna**, U Pal, A Hajari, A Bishnoi and P Sharma, “An *in-situ* study on solid state decomposition of Ammonia Borane: unmitigated by-product suppression by naturally abundant layered clay mineral”, *Inorg. Chem. Front.*, **5**, 2018, 301-309
5. **J Manna**, S Akbaryak, S Özkar, “Nickel(0) nanoparticles supported on bare or coated cobalt ferrite as highly active, magnetically isolable and reusable catalyst for hydrolytic dehydrogenation of ammonia borane”, *J Colloid and Interface Science*, 2017, 508, 359-368
6. **J Manna**, S Akbaryak, S Özkar, “Palladium (0) nanoparticles supported on polydopamine coated CoFe<sub>2</sub>O<sub>4</sub> as highly active, magnetically isolable and reusable catalyst for hydrogen generation from the hydrolysis of ammonia borane” *App Catal B: Environ*, **208** (5), 2017, 104–115
7. **J Manna**, S Akbaryak, S Özkar, “Palladium(0) nanoparticles supported on polydopamine coated Fe<sub>3</sub>O<sub>4</sub> as magnetically isolable, highly active and reusable catalyst for hydrolytic dehydrogenation of ammonia borane” *RSC Advances*, **6**, 2016, 102035–102042
8. DK Nandi, **J Manna**, A Dhara, P Sharma, SK Sarkar, “Atomic layer deposited cobalt oxide: An efficient catalyst for NaBH<sub>4</sub> hydrolysis” *J Vac Science & Tech A* **34** (1), (2016), 01A115
9. **J Manna**, B Roy, P Sharma, “Efficient hydrogen generation from sodium borohydride hydrolysis using silica sulfuric acid catalyst” *J Power Sources*, **275**, 2015, 727–733
10. B Roy, **J Manna**, P Sharma, “Effect of Ni alloys on thermal decomposition of ammonia borane” *J Alloys and Comp.*, **645**, (2015), S234–S238
11. **J. Manna**, B. Roy, M. Vashistha, P. Sharma, “Effect of Co<sup>+2</sup>/BH<sub>4</sub><sup>-</sup> ratio in the synthesis of Co-B catalysts on sodium borohydride hydrolysis”, *Int. J. Hydrogen Energy*, **39**, 1, 2014, 406–413
12. R. Edla, A. C. Gangal, **J Manna**, M Vashistha, P Sharma, “Kinetics and the thermal decomposition of Sodium Alanate in the presence of MnNi 4.5 Al 0.5 nanoparticles” *Mater Res Express*, **1**, (2014) 015501
13. A. C. Gangal, R. Edla, **J. Manna**, P. Kale and P. Sharma, “Study of kinetics and thermal decomposition of ammonia borane in presence of silicon nanoparticles”, *Int. J. Hydrogen Energy*, **37**(8), 2012, 6741-3748
14. **J. Manna**, M. Vashistha, P. Sharma, "Lithium borohydride as a hydrogen storage material: A review" *Int. J. of En. Clean Env.*, **11** (1-4), 2011, 65-97

### Conference(s)

1. **J Manna**, B Roy, D Pareek, P Sharma, “Hydrogen generation by hydrolysis of sodium borohydride with bentonite supported Co-B catalyst” European Hydrogen Energy Conference (**EHEC 2014**), 12<sup>th</sup>-14<sup>th</sup> March, 2014, Seville, Spain
2. **J Manna**, B Roy, P Sharma, “Zeolite supported cobalt catalysts for sodium borohydride hydrolysis” *App Mech Mater*, 490-491 (2014) pp 213-217,

- Conference Paper: International Conference on Power Science and Engineering (**ICPSE 2013**), Paris, France, December 20-21, 2013)
3. **J. Manna**, B. Roy, P. Sharma, “Co-B supported on bentonite as an effective novel catalyst for sodium borohydride hydrolysis”, International Union of Materials Research Societies – International Conference in Asia – 2013 (**IUMRS-ICA 2013**), 16-20<sup>th</sup> Dec, 2013, IISc, Bangalore, India (**Poster**)
  4. R Edla, AC Gangal, **J Manna**, P. Sharma, “Catalytic effect of transition metal boride on thermal decomposition of sodium alanate” 19<sup>th</sup> World Hydrogen Energy Conference (**WHEC 2012**), 3-7<sup>th</sup> June 2012, Toronto, Canada, (**Poster**)
  5. **J. Manna**, A. C. Gangal, R. Edla and P. Sharma, “Effect of Additives on Thermal Decomposition of Lithium Borohydride”, Proceedings of International Symposium on Energy materials (ISEM 2011), March 2011, CGCRI, Kolkata, India, (**Poster presentation**)

#### Academic award(s) / Scholarship(s)

- National Postdoctoral Fellowship, SERB, DST, Govt of India (2018)
- FRQNT Postdoctoral Fellowship, Govt of Canada, (2017)
- TUBITAK 2216 Postdoctoral Fellowship, Govt of Turkey (2015)

#### Personal Details

Date of Birth	01/04/1987
Nationality	Indian
Languages known	English, Hindi, Bengali
Permanent address	Uttar Gohomi, Dharampur, Jhargram, 721516, West Bengal, India