



List of Publications

List of publications (included in the thesis):

- [1] **Mohan, K.**, Bora, A., Nath, B. C., Gogoi, P., Saikia, B. J., and Dolui, S. K. A highly stable and efficient quasi solid state dye sensitized solar cell based on polymethyl methacrylate(PMMA)/polyaniline nanotube(PANI-NT) gel electrolyte. *Electrochimica Acta*, 222:1072-1078, 2016.
- [2] **Mohan, K.**, Dolui, S., Nath, B. C., Bora, A., Sharma, S., and Dolui, S. K. A highly stable and efficient quasi solid state dye sensitized solar cell based on polymethyl methacrylate (PMMA)/carbon black (CB) polymer gel electrolyte with improved open circuit voltage. *Electrochimica Acta*, 247:216-228, 2017.
- [3] **Mohan, K.**, Bora, A., and Dolui, S. K. Efficient way of enhancing the efficiency of a quasi-solid-state dye-sensitized solar cell by harvesting the unused higher energy visible light using carbon dots. *ACS Sustainable Chemistry & Engineering*, 6(8):10914-10922, 2018.
- [4] **Mohan, K.**, Bora, A., Roy, R. S., Nath, B. C., and Dolui, S. K. Polyaniline nanotube / reduced graphene oxide aerogel as efficient counter electrode for quasi solid state dye sensitized solar cell *Journal of Power Sources. (Revised)*.

Other publications:

- [1] Bora, A., **Mohan, K.**, Doley, S., Goswami, P., and Dolui, S. K. Broadening the sunlight response region with carbon dot sensitized TiO₂ as a support for a Pt catalyst in the methanol oxidation reaction. *Catalysis Science & Technology*, 8(16):4180-4192, 2018.
- [2] Bora, A., **Mohan, K.**, Doley, S., and Dolui, S. K. Flexible asymmetric supercapacitor based on functionalized reduced graphene oxide aerogels with wide working potential window. *ACS Applied Materials and Interfaces*, 10(9):7996-8009, 2018.
- [3] Bora, A., **Mohan, K.**, Phukan, P., and Dolui, S. K. A low cost carbon black/ polyaniline nanotube composite as efficient electro-catalyst for triiodide reduction in dye sensitized solar cells. *Electrochimica Acta*, 259:233-244, 2018.
- [4] Das, P., Ojah, N., Kandimalla, R., **Mohan, K.**, Gogoi, D., Dolui, S. K., and Choudhury, A. J. Surface modification of electrospun PVA/chitosan nanofibers by dielectric barrier discharge plasma at atmospheric pressure and studies of their mechanical properties and biocompatibility. *International Journal of Biological Macromolecules*, 114:1026-1032, 2018.

- [5] Nath, B. C., **Mohan, K.**, Barua, R., Ahmed, G. A., and Dolui, S. K. Dimensionally integrated α -MnO₂/Carbon black binary complex as platinum free counter electrode for dye sensitized solar cell. *Journal of Photochemistry and Photobiology A: Chemistry*, 348:33-40, 2017.
- [6] Bora, A., **Mohan, K.**, Pegu, D., Gohain, C. B., and Dolui, S. K. A room temperature methanol vapor sensor based on highly conducting carboxylated multi-walled carbon nanotube/polyaniline nanotube composite. *Sensors and Actuators, B: Chemical*, 253:977-986, 2017.
- [7] Khannam, M., Nath, B. C., **Mohan, K.**, and Dolui, S. K. Development of quasi-solid-state dye-sensitized solar cells based on a poly (vinyl alcohol)/poly (ethylene glycol)/functionalized multi-walled carbon nanotubes gel electrolyte. *ChemistrySelect*, 2(2):673-679, 2017.
- [8] Nath, B. C., **Mohan, K.**, Saikia, B. J., Ahmed, G. A., and Dolui, S. K. Designing of platinum free NiS anchored graphene/polyaniline nanocomposites based counter electrode for dye sensitized solar cell. *Journal of Materials Science: Materials in Electronics*, 28(1):1042-1050, 2017.
- [9] Das, D., Borthakur, L. J., Nath, B. C., Saikia, B. J., **Mohan, K.**, and Dolui, S. K. Designing hierarchical NiO/PAni-MWCNT core-shell nanocomposites for high performance super capacitor electrodes. *RSC Advances*, 6(50):44878-44887, 2016.
- [10] Nath, B. C., Das, D., Kamrupi, I. R., **Mohan, K.**, Ahmed, G. A., and Dolui, S. K. An efficient quasi solid state dye sensitized solar cell based on polyethylene glycol/graphene nanosheet gel electrolytes. *RSC Advances*, 5(115):95385-95393, 2015.
- [11] Sharma, S., Bora, P. J., Gogoi, P., Boruah, R., **Mohan, K.**, and Dolui, S. K. Plasmonic bulk heterojunction photovoltaic devices based on poly (9-vinylcarbazole)/gold nanocomposites: effect of aspect ratio of gold nanorod. *Journal of Materials Science: Materials in Electronics*, 26(7):5465-5474, 2015.
- [12] Bora, C., Sarkar, C., **Mohan, K.**, and Dolui, S. K. Polythiophene/graphene composite as a highly efficient platinum-free counter electrode in dye-sensitized solar cells. *Electrochimica Acta*, 157:225-231, 2015.

Papers presented in academic conferences:

- [1] Mohan, K. and Dolui, S. K. **Poster presentation** entitled 'An efficient dye sensitized solar cell based on polymethyl methacrylate / carbon black polymer gel electrolyte', Fourth International Symposium on Advances in Sustainable Polymers, IIT Guwahati, Assam, 2018.
- [2] Mohan, K. and Dolui, S. K. **Poster presentation** entitled 'An efficient and stable quasi solid state dye sensitized solar cell based on polymethyl methacrylate (PMMA) / carbon black (CB) polymer gel electrolyte with improved open circuit voltage', 25th National Conference on Condensed Matter Physics CMDAYS17, Tezpur University, Assam, 2017.
- [3] Mohan, K. and Dolui, S. K. **Poster presentation** entitled 'A highly stable quasi solid state dye sensitized solar cell with improved open circuit voltage based on polymethyl methacrylate (PMMA) / carbon black (CB) polymer gel electrolyte', UGC-SAP (DRS III) sponsored National seminar on Advances in Material Science, Guwahati University, Assam, 2017.
- [4] Mohan, K. and Dolui, S. K. **Poster presentation** entitled 'A highly stable efficient and stable quasi solid state dye sensitized solar cell based on PMMA/PANI blend polymer gel electrolyte', 104th Indian Science Congress, S.V. University, Tirupati, 2017.
- [5] **Participated** in workshop on 'Nuclear Magnetic Resonance (NMR)', Department of Chemical Sciences, Tezpur University, Assam, 2017.
- [6] **Participated** in workshop on science academies lecture workshop on 'Emerging trends in Chemical Sciences', Department of Chemical Sciences, Tezpur University, Assam, 2016.
- [7] **Participated** in 'Workshop on Arsenic Nilogon: Availability and Handling of Arsenic Nilogon Kit', Department of Chemical Sciences, Tezpur University, Assam, 2016.

