

8th ICGC 2018 Session: Topic 1. Green Chemicals, Polymers, and Materials

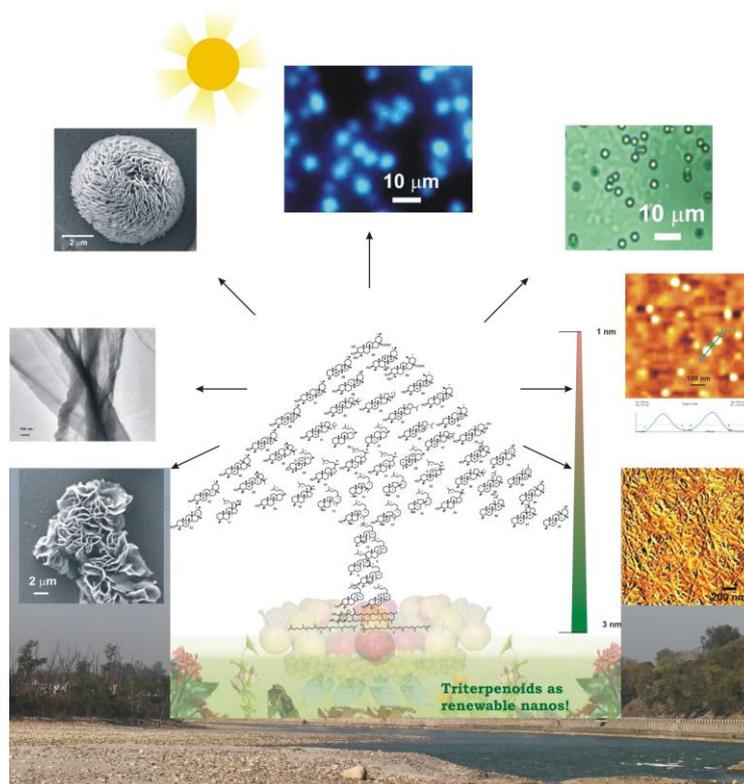
Self-assembly of renewable nano-sized triterpenoids

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Abstract: Plant metabolites may serve as a significant renewable alternative to fossil and petroleum resources for a sustainable future. Among various plant secondary metabolites, terpenoids constitute the most numerous and structurally diverse group of natural products having more than 300 ring systems. Computations carried out by us on sixty representative triterpenoids have revealed that all the triterpenoids are nanometer long having varied rigid and flexible lengths (Figure 1).¹⁻² The triterpenoids isolated from plants such as arjunolic, betulinic, oleanolic, glycyrrhetic and ursolic acids and betulin self-assembled in the liquids at low concentrations affording self-assembled nano- to micro-sized architectures such as helical fibers, vesicles, spheres, etc. The self-assemblies were capable entrapping fluorophores including the anticancer drug doxorubicin. Recent results will be presented in the perspective of green, renewable and nanos.



References

1. B.G. Bag, R. Majumdar, *Chem. Rec.* 2017, 17, 841-873.
2. R. Majumdar, S. Tantayanon, B.G. Bag, *Chem. Asian J.*, 2016, 2406-2414.



Braja Gopal Bag is currently a Professor at the Department of Chemistry and Chemical Technology, Vidyasagar University. Born in the year 1966, he obtained MSc in Chemistry from the IIT, Kharagpur in 1989 and PhD from the IISc Bangalore in 1994. Then he moved to Germany in 1996 as an Alexander von Humboldt fellow for post-doctoral research. He joined the Vidyasagar University as a Reader in Chemistry in the year 2000 and promoted to full Professor in 2008. He is the founder President of a Chemical Society named Chirantan Rasayan Sanstha[®]. His main research interests are plant metabolites as renewables, self-assembly, triterpenoids, nano-science and technology, hybrid materials and catalysis.