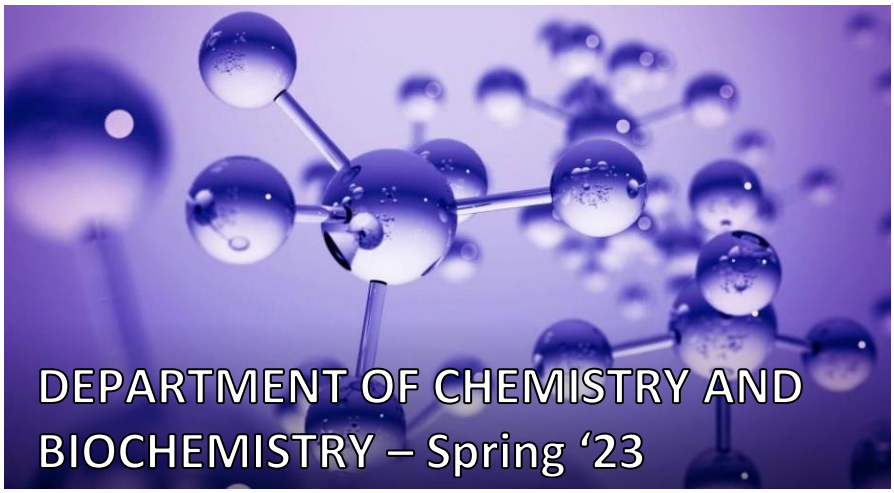

THE SALZBERG CHEMISTRY SEMINAR SERIES

The City College of New York

CREST IDEALS PHASE II

Tuesday, February 21, 2023 @ 12:00 noon – MR1027

Beyond Adsorption and Because of Adsorption: Exploring the *silent* aspect of carbon porosity

Teresa J. Bandosz
Department of Chemistry & Biochemistry
The City College of New York

Abstract: In this talk we would like to provide an insight into our perspectives on the new applications of nanoporous carbons that were inspired by the graphene features and its presence in these carbonaceous materials. A significant advancement to the "new" science of the "old" nanoporous carbons is in their new application such as gas sensing and ORR and CO_2RR catalysis. In these applications both surface chemistry and porosity are crucial factors determining the specific performance. The mechanism of specific processes based on an involvement of porosity will be proposed.

Our inspiration by the science of graphene combined with the comprehensive knowledge of activated carbons surface chemistry, texture, morphology and adsorptive/reactive adsorptive properties directed us to look at carbons from another perspective; from the perspective of nanotechnology. The results obtained by us and briefly addressed here are new and many questions have arisen, and are left unanswered, and many approaches need improvements. One has to take into consideration that explaining the complex phenomena in nanoporous carbons is not easy owing to the combination of the porosity and surface chemistry effects. Practically, either one cannot exist without another and they add up to that specific and unique synergy provided only by these materials. One thing is certainly true: "adventurous" graphene features can be found in nanoporous carbons and they deserve to be explored and used to their full extent.

Biography: Teresa J. Bandosz holds Ph.D. in Chemical Engineering from the Technical University of Crakow and D.Sc. in Physical Chemistry from M. Curie-Sklodowska University. She has been a faculty member of the Chemistry Department of CCNY/CUNY since 1996 (as full professor since 2005). She was named CUNY Distinguished Professor in 2020. She is a member of CUNY Energy Institute. For three years she was associated with Dalian University of Technology in China as a sky scholar/ guest professor of Chemical Engineering. Dr. Bandosz is a Fulbright Senior Scholar (2016/2017). She edited the book "Activated carbon surface in environmental remediation," published by Elsevier (2006). Her work during last 30 years has resulted in 6 US patents and over 400 publications in peer-reviewed journals.

Dr. Bandosz has a broad experience in the field of materials preparation, and their applications to environmental problems. Her recent research interests include synthesis of Graphene/ MOF, Graphene/hydroxide composites for separation and energy harvesting applications, visible light photoactivity of carbonaceous materials, energy storage, and CO_2 sequestration and reduction, development of carbon based sensors and ORR catalysts.

Dr. Bandosz is coeditor of Journal of Colloid and Interface Science since 2014. She was on the Advisory Board of American Carbon Society (2011-2016). She served on the Board of Directors of International Adsorption Society and on the Editorial Boards of Carbon, C, Adsorption Science and Technology, and Applied Surface Science. She was selected as The Graffin Lecturer for 2016/2017 by The American Carbon Society. She is the Fellow of the American Carbon Society and The Japan Society for the Promotion of Science.

Join Meeting in-person at MR-1027

To join remotely, register at:
https://ccny.zoom.us/meeting/register/tZwufu2vpj8qEtUztsbm6MsignisdO8cZB1K