Understanding the Induced Self-Assembly System Between PEO-*b*-PAA and Iron

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***Abstract*—The induced self-assembly phenomenon between PEO-*b*-PAA and Fe(II) was investigated. It was revealed that the electrostatic interaction between Fe(II) in the form of green rust (GR^{2+}) particles and the COO^- groups from the PAA backbone at pH 7 causes the formation of stable aggregates with D_h~156 nm. While it is stable at pH 7, the induced self-assembly structure, however, is disordered during the transformation of GR^{2+} into Fe_3O_4. The pH increment and the oxidation process itself were found to affect the stability.**