Single-phase($Fe_{0.7}Co_{0.3}$)$_{100-x}Si_x$ nanostructured powders(x¼0,5, 10,15and20)havebeenelaboratedby mechanical alloyinginordertoinvestigatetheeffectofsilicononthemicrostructureandmagnetic properties ofthesealloys.AdisorderedFe(Co,Si)solidsolutionwithbodycentredcubic(bcc)crystal structure isformedafter72hofmillingforallthecompositions.TheadditionofSigivesrisetoapro-gressivedecreaseofthelatticeparameter,fromabout2.865ÅforthebinaryFe$_{70}$Co$_{30}$ compound downto 2.841Åforthepowderwith x¼20. ThesamplewiththeuppermostSicontentexhibitsthelowestvalue for themeangrainsize(Ɛ10nm)aswellasthelargestmicrostrain(above1.1%).Allthesamplesa re ferromagnetic atroomtemperature,althoughthesaturationmagnetizationvaluereducesalmostlinearly by addingSitothecomposition.Asimilartrendisobservedforthehyperfine magnetic field obtained from theanalysisoftheroomtemperatureMössbauerspectra.Thehyperfine field distributionsshowa broad double-peakshapefor x40, whichcanbeascribedtomultiplelocalenvironmentsfortheFe atoms insideadisorderedsolidsolution.