Thesis investigates performative processes of research object materialization in everyday research practices enacted in a scientific laboratory examining biosynthesis of pheromones of bumblebees. Drawing attention to the simultaneous continuities and transformations that are characteristic for the specific materialization processes of the research object, the thesis attempts to question anthropocentric accounts of cognitive practices of science and focuses not only on human but also on non-human agency. It also attempts to challenge conceptualisation of matter as passive and essential entity which is grounded in positivist and representationalist accounts of science and knowledge. Instead, it aims to understand materiality and diskursivity as mutually and onto-epistemologically constitutive. The thesis also marginally focuses on the contemporary research policies and managerial and evaluation systems that are discussed here as normative actors transforming concept of science and agentially constituting research object enactment in everyday research practices. These debates are grounded in a posthumanist materialist framework that builds on literature in science studies (Actor-Network-Theory in particular) and feminist materialism of Karen Barad and Judith Butler.