

Abstract Submitted
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Carbon chains grown perpendicularly on graphene: Nanobrush

CAN ATACA, Department of Physics, Bilkent University, Ankara, Turkey, 06800,
SALIM CIRACI, Department of Physics, Bilkent University, Ankara, Turkey, 06800;
UNAM-Material Science and Nanotechnology, Bilkent University, Ankara, Turkey,
06800. — We predict a peculiar growth process, where carbon adatoms adsorbed
to graphene readily diffuse above room temperature and form linear chains. These
chains grow longer on graphene through insertion of carbon atoms one at a time
from the bottom end. Through this growth process two allotropic forms of carbon,
namely graphene and polyynes are combined to make several novel nanostructures.
Brush like graphene sheets with protruding polyynes can achieve chemical activity
and attain new functionalities.

Can Ataca
Department of Physics, Bilkent University, Ankara, Turkey, 06800

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