

Fraunhofer IAP | Geiselbergstraße 69 | 14476 Potsdam-Golm

to whom it may concern

Fraunhofer-Institut für
Angewandte Polymerforschung IAP

Institutsleiter
Prof. Dr. Alexander Böker

Geiselbergstraße 69
14476 Potsdam-Golm

Dr. Jens Buller
Abteilungsleiter
Stärkemodifikation / Molekulare Eigenschaften
Telefon + 49 331 568-1478
jens.buller@iap.fraunhofer.de
www.iap.fraunhofer.de

Potsdam-Golm, 14. Februar 2019

Letter of recommendation

Ms. Neha Yadav completed her master thesis from April 2018 to December 2018 with the topic "Development of Starch Based Flame Retardants, Modified with Phosphorus-Nitrogen Synergy Systems" in Bioplastics" at the Fraunhofer Institute for Applied Polymer Research in the department Starch Modification / Molecular Properties, which I lead. Her work included both the synthesis of starch phosphate carbamates and the compounding of products in bioplastics as well as their mechanical characterization and the characterization of flame retardant properties.

After a short briefing and familiarization with the topic of phosphating starch, Ms. Yadav worked independently on various synthesis experiments and the analysis and characterization of the products. Despite a relatively low starting level of synthetic and chemoanalytical knowledge due to her studies, Ms. Yadav was able to optimize known manufacturing processes and identify suitable manufacturing methods due to her great logical understanding, her high willingness to learn and her determination.

She organised her experiments independently; she worked well structured and with great care. Ms. Yadav is very familiar with various mechanical and thermal analysis methods for materials. In her work, for example, she used Tensile tests, TGA and DSC. In the synthesis and analysis of the new additives, as well as in the compounding and characterization of bioplastics, she used the following methods independently: Dry conversion in laboratory kneader, elemental analysis, ICP-OES, compounding in laboratory extruder, injection moulding, LOI, UL94.

Mrs. Yadav is an extremely friendly and polite person with high team ability. Her excellent English was an enrichment and together with her solution-oriented but also creative approach ensured very pleasant and interesting conversations and scientific discussions of the results. At work, Ms. Yadav was characterized by a high level of motivation as well as determination and confidence. Mrs. Yadav challenges herself and actively searches for new possibilities and experiences. Her willingness to work on chemical issues in her master's thesis in addition to her engineering work was particularly noteworthy.

Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e. V., München
Vorstand

Prof. Dr.-Ing. habil. Prof. E. h. Dr.-Ing. E. h. mult. Dr. h. c. mult. Reimund Neugebauer, Präsident
Prof. Dr. rer. publ. ass. iur. Alexander Kurz
Dipl.-Kfm. Andreas Meuer
Prof. Dr. rer. nat. Georg Rosenfeld

Bankverbindung Deutsche Bank, München
Konto 752193300 BLZ 700 700 10
IBAN DE86 7007 0010 0752 1933 00
BIC (SWIFT-Code) DEUTDEMM
USt-IdNr. DE129515865
Steuernummer 143/215/20392

letter of recommendation

Potsdam-Golm, 14. Februar 2019

The very interesting results of her work prove her right. Her intelligence, versatility and the ability to work hard will help her in a successful career.

Yours sincerely



Jens Buller