

## REPORT

Report on participation of the ICMR International Fellow (ICMR-IF) in Training/Research abroad.

1. Name and designation of ICMR- IF : Dr. Manoj Pratap Singh
2. Address : AIRF, JNU, New Delhi
3. Frontline area of research in which training/ research was carried out : Environmental health
4. Name & address of Professor and host institute : Dr. Christopher Marjo,  
Head (SSEAU)  
Mark Wainwright Analytical Centre,  
University of New South Wales (UNSW),  
Kensington, NSW, 2052  
Sydney, Australia
5. Duration of fellowship : 3 Months
6. Highlights of work conducted
  - i) Technique/expertise acquired : Advanced analytical techniques including XRD, XRF, ICP-MS, ICP-OES and size-exclusion chromatography
  - ii) Research results, including any papers, prepared/submitted for publication:
    - a) The mineralogical profile of a comprehensive set of urban soil and road dust samples from Delhi was characterized by XRF and XRD; b) A total 43 elements were analyzed by XRF, ICP-OES and ICP-MS in these samples, including toxic transition metals, all Pb isotopes for anthropogenic signatures, and all non-radioactive rare earth elements (REEs); c) A number of trace elements were present at levels potentially damaging to human health in different sample fractions. The origin of these elements as being from natural sources or anthropogenic is discussed d) Manuscripts describing our results for soil samples and for airborne dust particles are under preparation to be submitted in reputed journals in the field before the end of 2018.
  - iii) Proposed utilization of the experience in India :

Acquired research and training experience are relevant to environmental geochemistry, geology, materials and biological sciences that will be invaluable for researchers in India. In addition I have developed a strong collaboration with the Australian group who are available to advise and develop my skills in these areas.

  
Signature of ICMR-IF

ICMR Sanction No.: INDO/FRC/452/(Y-37)2017-18-IHD