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2 The 20<sup>th</sup> Science Council of Asia (SCA)

3 *"The Age of New Materials: Innovation for Sustainable Society"*

4 Declaration

5 Innovation for Inclusive and Sustainable Society in the Post-COVID 19 Era:

6 Towards the Age of New Materials  
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8 On this date of May 14<sup>th</sup> 2021,

9 We, delegates of the Science Council of Asia (SCA) Board and General Assembly, and participants  
10 of the 20<sup>th</sup> SCA Conference, affirm that it is essential for all the nations and regions in Asia to put  
11 greater efforts on research and innovation for our better life and for a more sustainable planet.  
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13 We live in the one world with enormous challenges, the on-going Covid-19 pandemic, the threat  
14 of global warming, the ageing society, etc. Politicians, economists, and scientists are searching for  
15 solutions along different directions, and we believe that one of the fundamental solutions is to  
16 embrace the age of new materials: to discover new materials, to create more functionalities, and  
17 to use materials in more energy efficient and environmental friendly ways.  
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19 Recalling the theme of the conference and recognizing the critical needs for a harmonious and  
20 sustainable society, the 20th SCA conference makes the following declarations:  
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22 1. We need to pay more attention to, and make more joint efforts on emerging disruptive  
23 innovations in materials sciences

24 We are witnessing more and more disruptive innovations in materials sciences: materials  
25 design based on computation, short loop cost effective materials engineering based on in-situ and  
26 in operando characterizations enabled by modern science instrumentation, two dimensional (2D)  
27 materials and atomic precision materials engineering, quantum materials etc. They may shape our  
28 society in drastic game changes. To accelerate the breakthrough and to make full use of the new  
29 innovations, we need more cross-collaboration efforts, more international joint efforts, and more  
30 correct forecasts of the needs of people.  
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32 2. The interplay of materials, information, energy, biology and environment are decisive for the  
33 sustainability of our society

34 Materials, information, energy and biology are the fundamental social infrastructure to  
35 modern civilizations. They have huge impacts on our life and the environment. The materials to be  
36 developed should be more harmonious with green, recyclable, naturally degradable, energy  
37 effective and respective to the ownership, etc. Higher priority needs to be considered for smart  
38 materials including nano-materials, bio-materials, flexible materials, AI, robotics etc. Materials  
39 pertinent to data generation and utilization are becoming more and more important. The merging  
40 of Bio and Infor Tech (BTIT) holds promises on functionality, versatility and energy efficiency.

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41 Everything needs to be designed, engineered and used in environmentally compatible ways for  
42 social sustainability.

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44 3. We highly value social diversity, gender equality and promote science advances for regional  
45 and global economic growth with better preservation of Asian culture richness

46 Asian countries and regions possess rich regional cultures and highly diversified societies.  
47 Asian countries and regions also face global challenges such as gender equality, ageing society,  
48 protectionism, misconduct and misuse of science and technology achievements. SCA is aware of  
49 the unintentional adverse effects of science and technology development on the society. SCA  
50 strives for influence on the mindsets of policy makers, economists and scientists so that they  
51 become vanguard for promotion science advances, to provide solutions for social problems, as well  
52 as for protection of social diversity and culture richness.

53

54 4. Promoting scientific collaboration as a means for improving Asian influences

55 Asia is playing an increasingly important role in global economy and politics. To further enhance  
56 the influences of Asian countries and regions on the global stage, SCA member academies shall  
57 work together, to promote bilateral or multilateral scientific collaborations, organize joint  
58 education programs. It is also highly important to create platforms for training, sharing society  
59 diversities, culture differences, to help overcome the barriers for such cross- country collaborations.  
60 It would be of high value to provide opportunities for overseas training of young scientists, female  
61 scientists, and internships for better understandings of people from different countries, so that  
62 they become driving forces for the prosperity of countries in Asia in terms of science, technology  
63 and social development in the near future.

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65 Recommended Actions:

66 - SCA recognizes that it is important to refine the strategic goals and objectives of short-term  
67 and long-term in line with the United Nation’ s SDGs, incorporate with guidelines or  
68 roadmaps to form (temporary) co-working groups on specific issues.

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70 - Equally important is to develop international and regional cooperation between and beyond  
71 the SCA academies in aspects like strengthening capacity building, setting priority directions  
72 of research and collaboration, making joint projects, encouraging joint publications, defining  
73 concrete objectives and time lines, building database of experts to facilitate collaboration,  
74 making tutorial or training courses during SCA conferences or separately etc.

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76 - It’ s also necessary to develop rational ways of communication, for example, on virtual  
77 forum, online meeting space, online discussion, in science under critical condition such as  
78 the COVID-19 crisis.

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80 We, SCA, pledge to promote science and technology advances and to strengthen the scientific  
81 communities in Asia for more effective contributions in responding to social needs, and to achieve  
82 the United Nation’ s 2030 Agenda for Sustainable Development, which is “to leave no one behind”.  
83 We understand that it is a challenging job but worthy to devote ourselves for the benefit of Asian  
84 countries and regions, and for the whole world.